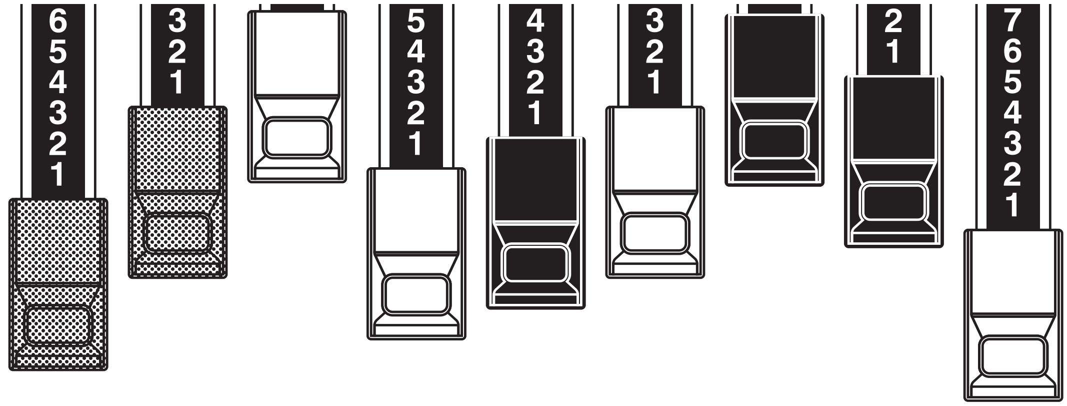


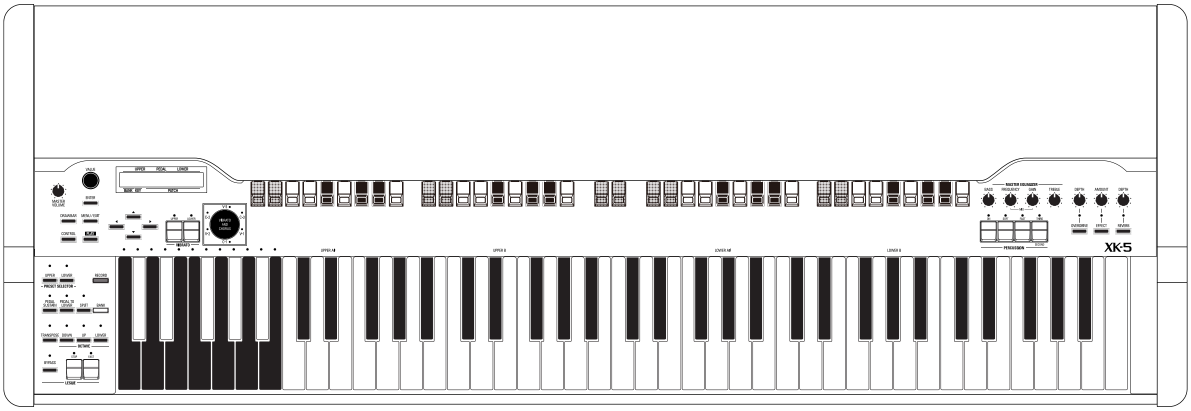
HAMMOND

Model: XK-5
Model: A-3

Thank you, and congratulations on your choice of the Hammond XK-5 / A-3 Organ

The XK-5 / A-3 is an all-new instrument which produces the sound and contains the features of a classic Hammond "Tone Wheel" organ,

Please take a moment to review this manual thoroughly in order to familiarize yourself with the features of this instrument as well as the installation procedures. Keep this manual for future reference.



OWNER'S PLAYING GUIDE

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions.

Keep these instructions.

Heed all warnings.

Follow all instructions.

Do not use this apparatus near water.

Clean only with dry cloth.

Do not block any ventilation openings.
Install in accordance with the manufacturer's instructions.

Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Only use attachments/accessories specified by the manufacturer.

Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When cart is used: use caution when moving the cart/apparatus combination to avoid injury from tip-over.

PORTABLE CART WARNING

S3125A

Unplug this apparatus during lightning storms, or when unused for long periods of time.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
ATTENTION: Pour réduire les risques de choc électrique ou d'incendie, ne pas exposer cet appareil à la pluie ou à l'humidité.

-THIS APPARATUS MUST BE EARTHED.

-The socket-outlet shall be installed near the apparatus and shall be easily accessible.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

注意：感電の恐れありキャビネットをあけるな
ATTENTION : RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

The lightning flash with arrowhead symbol within an equilateral triangle, indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

The exclamation point within equilateral triangle, indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

In case in the future your instrument gets too old to play/use or malfunctions beyond repair, please observe the instructions of this mark, or, if any question, be sure to contact your dealer or your nearest town or municipal office for its proper disposal.

FOR UNITED KINGDOM:
FOR YOUR SAFETY, PLEASE READ THE FOLLOWING TEXT CAREFULLY
This appliance is supplied with a molded 3-pin mains plug for your safety and convenience.
The plug contains a 5 amp fuse.
Should the fuse need to be replaced, please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BSI1362.

Check for the ASTA mark ASA or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover, you must ensure that it is refitted when the fuse is replaced.
If the fuse cover is lost, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be obtained from your local Hammond Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME, THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT-OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be attached to the cord, please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.
IMPORTANT - The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral
Brown: Live

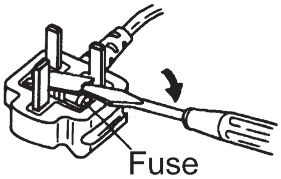
As the colours of the wires in the mains lead of this unit may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three-pin plug, marked with the letter E or the Earth Symbol ⏚.

To replace the fuse, open the fuse compartment with a screwdriver and replace the fuse and fuse cover.



IMPORTANT - PLEASE READ

◆ Power Supply

- ◆ Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- ◆ Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.
- ◆ This unit features an Auto Power Off function that automatically turns the power off if the unit is not operated for a specified period of time. The setting will revert to its default value if not backed up before the power is turned off.

◆ Placement

- ◆ Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- ◆ This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- ◆ Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- ◆ Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Also, do not allow lighting devices that normally are used while their light source is very close to the unit (such as a piano light), or powerful spotlights to shine upon the same area of the unit for extended periods of time. Excessive heat can deform or discolor the unit.
- ◆ When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.
- ◆ Do not allow rubber, vinyl, or similar materials to remain on the unit for long periods of time. Such objects can discolor or otherwise harmfully affect the finish.
- ◆ Do not paste stickers, decals, or the like to this instrument. Peeling such matter off the instrument may damage the exterior finish.

◆ Maintenance

- ◆ To clean the unit, use a dry, soft cloth; or one that is slightly dampened.
- ◆ To remove stubborn dirt off plastic parts, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth. Try to wipe the entire surface using an equal amount of strength, moving the cloth along with the grain of the wood. Rubbing too hard in the same area can damage the finish.
- ◆ Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

◆ Additional Precautions

- ◆ Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of losing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory in USB Flash drive.
- ◆ Unfortunately, it may be impossible to restore the contents of data that was stored in another MIDI device (e.g., a sequencer) once it has been lost. Hammond assumes no liability concerning such loss of data.
- ◆ Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- ◆ When connecting / disconnecting all cables, grasp the connector itself - never pull on the cable. This will avoid causing short circuits, or damage to the cable's internal elements.
- ◆ To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- ◆ When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

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MAIN FEATURES

◆ AUTHENTIC HAMMOND DRAWBAR ORGAN

The XK-5 is first and foremost a genuine Hammond Organ with Virtual Tone Wheels to provide the traditional sound.

◆ VIRTUAL MULTI-CONTACT KEYBOARD

The XK-5 is equipped with a Virtual Multi-Contact Keyboard to produce the comfortable feeling and quick response of models such as the B-3 and C-3. The unique "touch" of a Vintage Hammond, where the different harmonics sound in sequence as a key is pressed, is now at your fingertips. All of the iconic Hammond performance techniques or "Moves" used by legendary Hammond players have the familiar response and sound.

◆ 5 SETS OF DRAWBARS & PRESET KEYS

The XK-5 has the same configuration of 5 sets of Drawbars and reverse-color Preset Keys as the B-3 and C-3. They are equipped to enable instant switching of Drawbar settings and dynamic tone changes during performance.

◆ VIBRATO & CHORUS

You can control the degrees of Vibrato and Vibrato Chorus wuth two ON/OFF controls and a six-position switch just as on the B-3 and C-3.

◆ LESLIE

A digital and programmable Leslie is available for the Drawbar tones. Also, an 11-pin Leslie jack is provided which allows you to use the XK-5 with a Leslie Speaker having an 11-pin interface.

◆ AMPLIFIER SIMULATOR/EFFECTS

The tube circuits simulate the pre-amplifier of the B-3/C-3 to provide "tube warmth." Four different "Overdrive" Preamp Emulation Profiles allow you to add varying degrees of "crunch" to the sound.

◆ MULTI-EFFECTS

Also equipped are an Equalizer, Multi-Effects, and, in addition, a Master Equalizer for adjusting the total tonal quality. This corresponds with the sporadic unexpected requirements during performance.

◆ MIDI MASTER KEYBOARD

Six (6) External Zones are available to enable the XK-5 to be used as a MIDI master keyboard.

◆ PATCHES AND FAVORITES

The XK-5 has several different "Preset Banks" which allow the reverse-color Preset Keys to be programmed with a number of different settings. The Preset Keys can be assigned to patches within the selected Bank, or can be re-assigned as "Favorites" recalling your choice of patches from any of the Preset Banks.

◆ SYSTEM EXPANSION

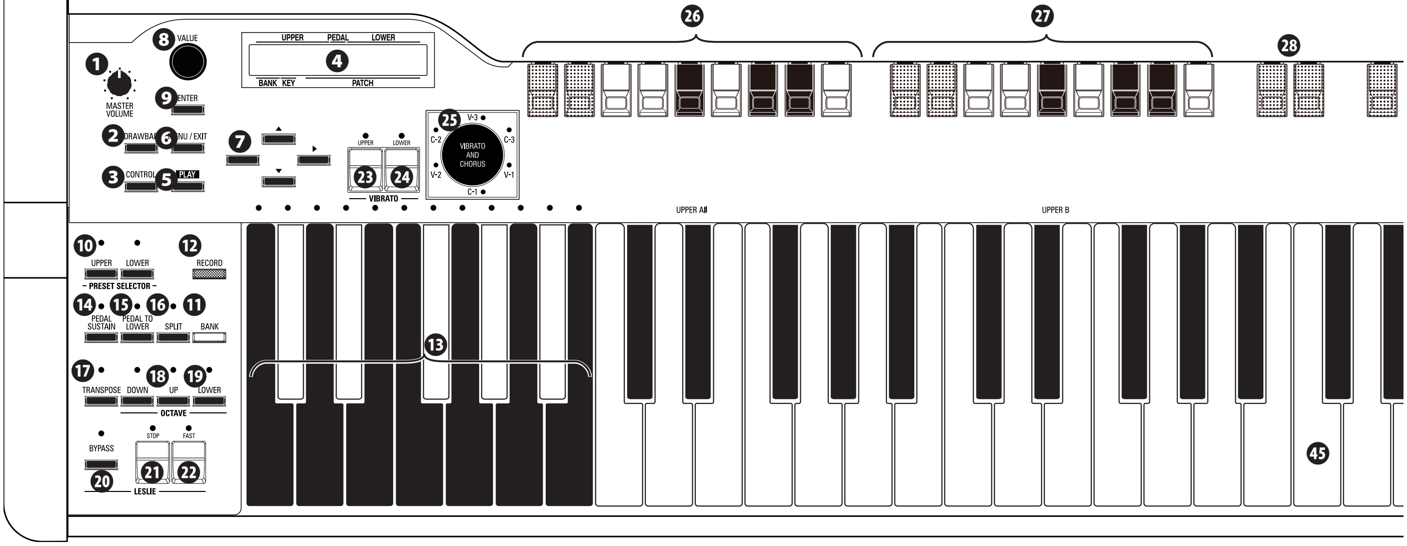
You can expand the XK-5 to a console-style organ by adding the optional Lower Keyboard XLK-5 and the Pedal Keyboard XPK-250.

◆ USB COMPATIBILITY

The XK-5 has both USB "A" and "B" ports. The "A" port ("USB to Host") enables easy System, MIDI, and Audio Communications with your Computer. The "B" port allows Backups and Software Upgrades which are simple procedures, using common USB 'Flash' Drives.

FEATURE CALLOUT

CONTROL PANEL


❶
MASTER VOLUME
❽ VALUE
UPPER
PEDAL
LOWER
❹
BANK
KEY
PATCH
❾ ENTER
❷ DRAWBAR
❻ MENU / EXIT
❸ CONTROL
❺ PLAY
❼
UPPER
LOWER
㉓
㉔
VIBRATO
㉕
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
㉖
㉗
㉘
UPPER A#
UPPER B
❿ UPPER
LOWER
PRESET SELECTOR
⓬ RECORD
⓮ PEDAL SUSTAIN
⓯ PEDAL TO LOWER
⓰ SPLIT
⓫ BANK
⓭
⓱ TRANSPOSE
⓲ DOWN
UP
⓳ LOWER
OCTAVE
BYPASS
⓴
STOP
FAST
㉑
㉒
LESLIE
㊺

◆ UPPER LEFT

❶ MASTER VOLUME Rotary Knob

Controls the volume of the entire instrument. (P. 28)

❷ DRAWBAR Touch Button

Locates DRAWBAR FUNCTION Mode. (P. 52)

❸ CONTROL Touch Button

Sets the various controllers such as Foot Switch or Expression Pedal.(P. 122)

◆ CONTROL PANEL

❹ DISPLAY

Shows the current registration or currently selected Menu.

❺ PLAY Touch Button

Locates the PLAY or performance mode. (P. 37)

❻ MENU/EXIT Touch Button

Locates the MENU Mode and exits from various function pages. (P. 38)

❼ NAVIGATION Touch Buttons

Moves the cursor in the display or locates other pages.

❽ VALUE Rotary Knob

Increases/Decreases Patch numbers(P. 108) while performing or adjusts values(P. 40) during editing.

❾ ENTER Touch Button

Confirms the current entry or procedure.

◆ PRESETS

❿ PRESET SELECTOR Touch Buttons

This allows you to select whether the Preset Keys change Upper or Lower Manual registrations when the XK-5 is used as a single-manual instrument. (P. 112)

⓫ BANK Touch Button

This allows you to select different Preset Banks called up by the Preset Keys. (P. 112)

⓬ RECORD Touch Button

Records a Patch, Favorite, Leslie Cabinet, etc. (P. 113)

⓭ PRESET KEYS

Recalls and Records the Patch or Favorites.

NOTE: The "A♯" and "B" Preset Keys are associated with Upper and Lower Drawbars. See the next page for more detailS.

◆ KEYBOARD CONTROL

⓮ PEDAL SUSTAIN Touch Button

Turns Pedal Sustain "ON" and "OFF." (P. 51)

⓯ PEDAL TO LOWER Touch Button

Couples the Pedal registration to the Lower Manual. (P. 51)

⓰ SPLIT Touch Button

Divides the keyboard into Upper (right) and Lower (left) Manuals. (P. 66)

⓱ TRANSPOSE Touch Button

Shifts the musical key of the entire instrument. (P. 120)

⓲ OCTAVE Touch Buttons

Moves the pitch of the Upper Manual "UP" or "DOWN" by octaves. (P. 66)

⓳ OCTAVE LOWER Touch Button

Moves the pitch of the Lower Manual "UP" or "DOWN" by octaves when used with the OCTAVE Touch Buttons. (P. 66)

◆ LESLIE

⓴ BYPASS Touch Button

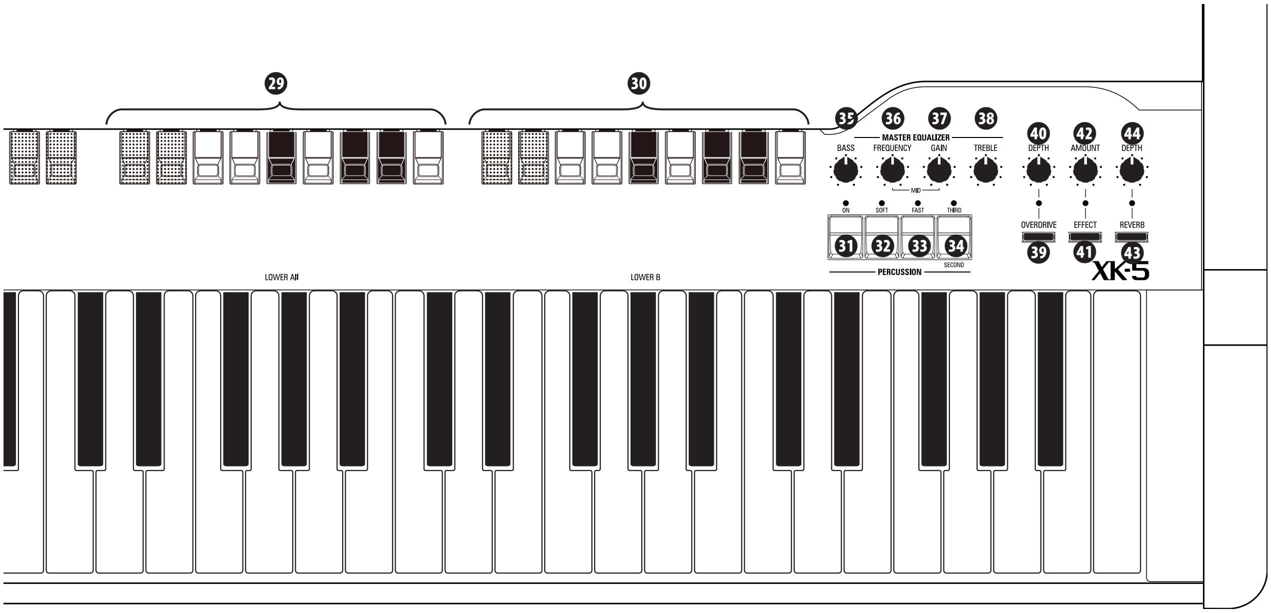
Changes the sounds produced by the Drawbars from the Leslie channel to the stationary channel. (P. 72)

㉑ STOP Touch Tab

Stops the Leslie Rotors from turning when the [FAST] Touch Tab is "OFF." (P. 72)

㉒ FAST Touch Tab

Selects "Fast" Leslie Rotor speed. (P. 72)



◆ VIBRATO AND CHORUS

㉓ UPPER Touch Tab

Turns the Vibrato/Chorus “ON” for the Upper Manual. (P. 70)

㉔ LOWER Touch Tab

Turns the Vibrato/Chorus “ON” for the Lower Manual. (P. 70)

㉕ VIBRATO & CHORUS MODE Rotary Knob

Selects the depth of both Vibrato and Chorus. (P. 70)

◆ HARMONIC DRAWBARS

These provide all the basic tones of the instrument. (P. 46)

㉖ UPPER “A♯“ DRAWBAR SET

Plays on the Upper Manual when the ❿ [UPPER] PRESET SELECTOR is “ON” and the ⓭ “A#” Preset Key is selected.

㉗ UPPER “B” DRAWBAR SET

Plays on the Upper Manual when the ❿ [UPPER] PRESET SELECTOR is “ON” and the ⓭ “B” Preset Key is selected.

㉘ PEDAL DRAWBAR SET

Plays from a connected MIDI Pedal Clavier or from the Manual when the PEDAL TO LOWER feature is selected.

㉙ LOWER “A♯“ DRAWBARS

Plays on the Lower Manual when the ❿ [LOWER] PRESET SELECTOR is “ON” and the ⓭ “A#” Preset Key is selected.

㉚ LOWER “B” DRAWBARS

Plays on the Lower Manual when the ❿ [LOWER] PRESET SELECTOR is “ON” and the ⓭ “B” Preset Key is selected.

◆ PERCUSSION

㉛ ON Touch Tab

Adds the Percussion effect to the Upper Manual. (P. 57)

㉜ SOFT Touch Tab

Selects “NORMAL” or “SOFT” Percussion Volume. (P. 57)

㉝ FAST Touch Tab

Selects “SLOW” or “FAST” Percussion decay time. (P. 57)

㉞ THIRD/SECOND Touch Tab

Selects “SECOND” or “THIRD” Percussion harmonic. (P. 57)

◆ MASTER EQUALIZER

㉟ BASS Rotary Knob

Adjusts the gain of the bass range. (P. 80)

㊱ MID FREQUENCY Rotary Knob

Adjusts the frequency of the middle range. (P. 80)

㊲ MID GAIN Rotary Knob

Adjusts the gain of the middle range. (P. 80)

㊳ TREBLE Rotary Knob

Adjusts the gain of the treble range. (P. 80)

◆ EFFECTS

㊴ OVERDRIVE Touch Button

Turns the Overdrive effect “ON” or “OFF.” (P. 79)

㊵ OVERDRIVE Rotary Knob

Adjusts the depth of the Overdrive effect. (P. 79)

㊶ EFFECT Touch Button

Turns Multi-Effects “ON” or “OFF.” (P. 82)

㊷ EFFECT AMOUNT Rotary Knob

Adjusts the amount of selected Multi-Effects. (P. 82)

㊸ REVERB Touch Button

Turns the Reverb effect “ON” or “OFF.” (P. 82)

㊹ REVERB DEPTH Rotary Knob

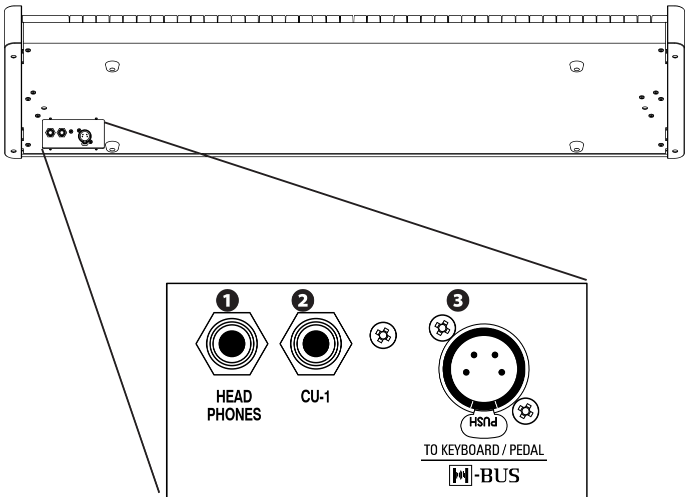
Adjusts the depth of the Reverb effect. (P. 82)

◆ MANUAL

㊺ MANUAL

Square-front, “waterfall”-style keys, non-weighted, Virtual Multi-Contacts (P. 101). 61 playing keys, 12 Preset Keys.

ACCESSORY PANEL (Recessed)



❶ **HEADPHONE jack**

Connect a set of stereo headphones.

NOTE: Connecting headphones does *not* mute the LINE OUT jacks or the 11-pin Leslie connector.

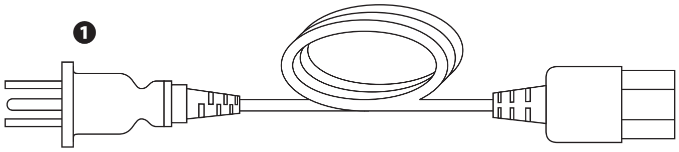
❷ **CU-1 jack**

Connect the CU-1 Leslie mode switch.

❸ **H-BUS jack**

Connect an XLK-5 Lower keyboard or XPK-250 Pedal Clavier using a Hammond H-BUS cable.

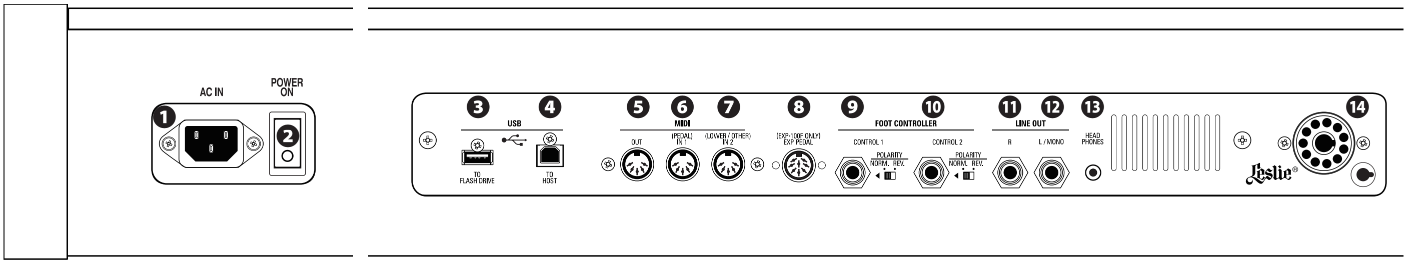
ACCESSORIES



❶ **AC POWER CORD**

Plug into the AC Power Receptacle of the XK-5.

REAR PANEL



◆ POWER

❶ AC POWER RECEPTACLE

Connect the female end of a grounded AC Power Cord here, and the male end into a grounded A.C. power outlet.

❷ ON/OFF POWER SWITCH

Turns the AC power to the instrument "ON" or "OFF.."

◆ USB PORTS

❸ USB "A" PORT (TO FLASH DRIVE)

Insert a USB peripheral device such as a Flash Drive. (P. 130)

❹ USB "B" PORT (TO HOST)

Connect to a host device such as a computer. (P. 144)

◆ MIDI PORTS

❺ MIDI OUT port

Sends performance information. (P. 130)

❻ MIDI IN 1/PEDAL port

Use to connect the MIDI OUT of a Hammond Pedal Clavier such as an XPK-200L. (P. 130)

❼ MIDI IN 2/OTHER port

Use to connect a Lower Manual such as the Hammond XLK-5. (P. 130)

◆ CONTROLLER JACKS

❽ EXP. PEDAL jack

Use to connect the optional EXP-100F Expression Pedal to control the volume while playing. (P. 19)

❾ FOOT CONTROLLER 1 jack

❿ FOOT CONTROLLER 2 jack

Use to connect a Foot Switch (FS-9H) or Expression Pedal (EXP-50/50J/20/30). (P. 19)

Use the [POLARITY] switch for each FOOT CONTROLLER jack to condiagram the connected Foot Controller.

The following Foot Controllers have been approved for use on the XK-5:

HAMMOND
FS-9H, EXP-50, EXP-50J, EXP-20, VFP1, V-20H, V-20R: NORM
KORG
EXP-2, XVP-10: REV
ROLAND
EV-5, EV-7: NORM
YAMAHA
FC4, FC5: NORM
FC3, FC7: REV

◆ AUDIO OUTPUT JACKS

⓫ LINE OUT R jack

⓬ LINE OUT L/MONO jack

Use these jacks to connect an exteral amplifier. If the connected mixer or monitor speaker is stereophonic, connect both L and R. If monaural, connect only the L/MONO terminal. (P. 18)

⓭ HEADPHONES jack

Use to connect a set of stereo headphones.

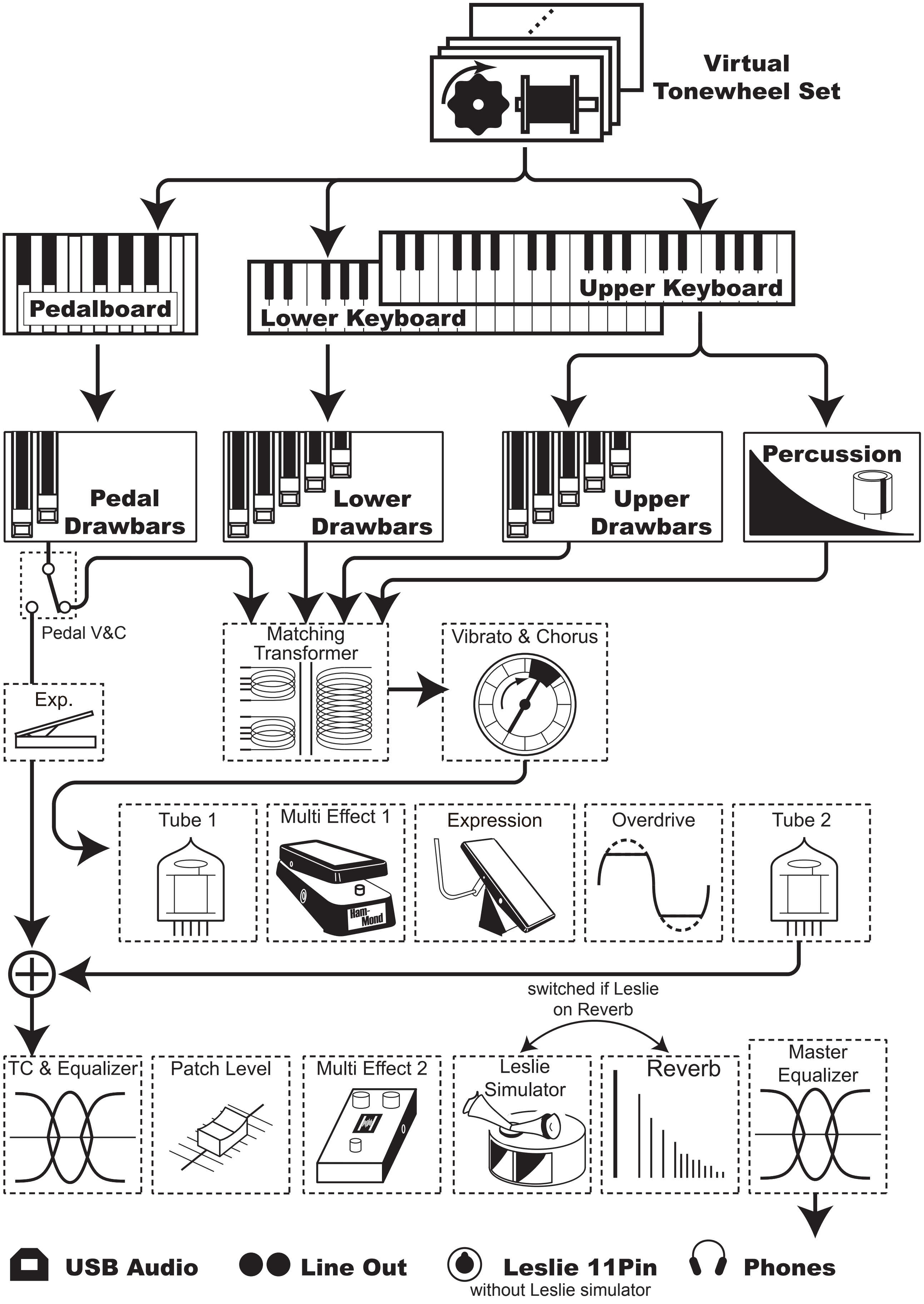
NOTE: The HEADPHONE jack does not mute the LINE OUT or LESLIE audio outputs. If you wish the sound to go through only the Headphones, disconnect all other audio outputs. If you are using an amplifier, be sure to turn the power to the amplifier "OFF" before disconnecting the audio cables.

⓮ LESLIE 11-PIN jack

Use to connect a Leslie Speaker cabinet. (P. 20)

IMPORTANT NOTE: The XK-5 is designed to be connected to a Leslie Speaker having an 11-pin interface. Connecting the instrument to other Leslie Speakers may require a special adapter kit and/or Connector Cable. Contact your Hammond Organ Dealer for more information regarding which adapter kit and/or cable you may need.

SOUND ENGINE STRUCTURE


Virtual
Tonewheel Set
Pedalboard
Lower Keyboard
Upper Keyboard
Pedal
Drawbars
Lower
Drawbars
Upper
Drawbars
Percussion
Pedal V&C
Matching
Transformer
Vibrato & Chorus
Exp.
Tube 1
Multi Effect 1
Ham-
Mond
Expression
Overdrive
Tube 2
switched if Leslie
on Reverb
TC & Equalizer
Patch Level
Multi Effect 2
Leslie
Simulator
Reverb
Master
Equalizer
USB Audio
Line Out
Leslie 11Pin
without Leslie simulator
Phones

To fully understand this instrument, read the following detailed explanations about the various functions.

TONE WHEELS

The sound source or "engine" of the classic Hammond Organ is the electromagnetic "Tone Wheel Generator." The XK-5 contains a digital Tone Wheel Generator which gives the same musical performance as the earlier instruments but with no moving parts.

NOTE: The Tone Wheel Generator is explained in more detail in the CUSTOM TONE WHEELS section of this Manual.

KEYBOARDS

When a playing key is depressed, the tone signals created by the Virtual Tone Wheels are allowed to sound. The instrument will play whatever registration is currently selected on the manual being played.

DRAWBARS

A note of the instrument, played on either manual or a pedal keyboard, will generally consist of a fundamental pitch and a number of harmonics, or multiples of the fundamental frequency. The fundamental and eight harmonics available on each playing key are individually controllable by means of "Drawbars." Each Drawbar represents a particular harmonic, and each Drawbar adjusts the volume of its harmonic.

TOUCH-RESPONSE PERCUSSION

This adds a percussive attack. It is controlled by four Touch Tabs at the upper right of the control panel. Percussion is available only on the Upper Manual and normally only when the 'B' Preset Key is active.

MATCHING TRANSFORMER

The Matching Transformer on a tone-wheel Hammond Organ matches the low impedance of the Tone Wheels and key circuits to the high impedance amplifier input. It serves also, through taps on its primary winding, to establish a series of intensity levels for the Drawbars. This feature reproduces these characteristics digitally.

VIBRATO & CHORUS

The Vibrato & Chorus gives depth and richness to the organ sound by slightly varying the pitch (Vibrato), or doubling the voice by mixing the original sound, with a duplicate, slightly detuned one (Chorus).

PRE AMPLIFIER, OVERDRIVE

"Pre-amplifier" recreates the performance of the pre-amplifier of a B-3-type tone-wheel organ. "Overdrive" adds distortion to the sound by increasing the pre-amplifier input gain.

MULTI-EFFECTS

The Multi-Effects section create various effects such as Tremolo, Wah-Wah, .

EQUALIZER, LESLIE, REVERB

Other on-board Effects are as follows: an Equalizer for sculpting the tonal response, a Leslie effect for rotary speaker effects, and Reverb.

NOTE: The built-in digital Leslie effect is disengaged when an external Leslie Speaker cabinet is connected to the instrument the 11-pin terminal.

MASTER EQUALIZER

The Master Equalizer allows you to adjust the overall frequency response of the entire instrument in real time.

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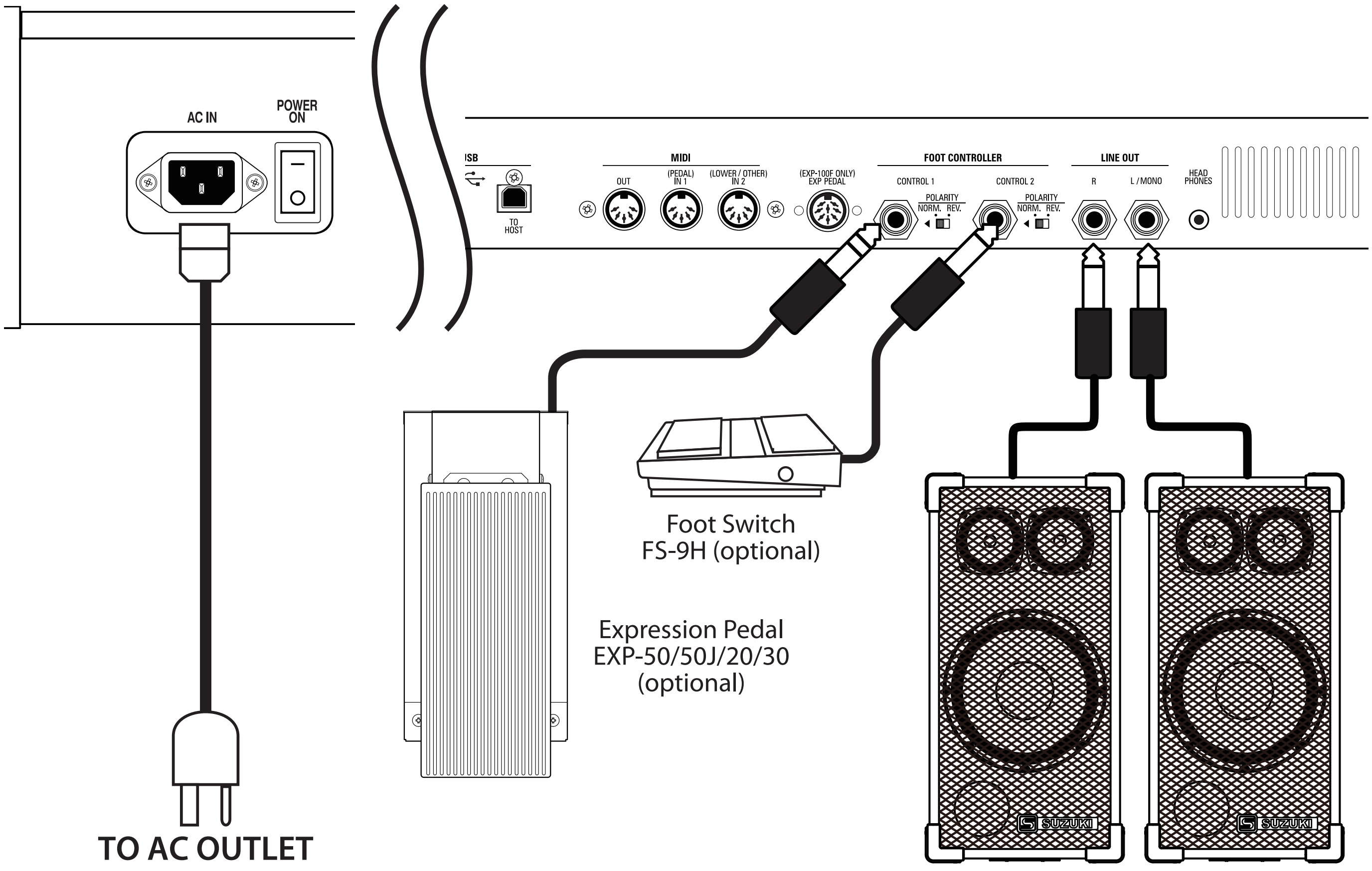
MAKING THE CONNECTIONS

BASIC CONNECTIONS

IMPORTANT: Make sure both the instrument and amplifier are "OFF" before connecting amplifiers or headphones.

Connect audio cables and accessories as shown below.

Tne XK-5 is not self-contained - an external amplifier/speaker system is required in order to hear the sound. However, if you connect a set of stereo headphones to the HEADPHONES jack, you can hear the sound through the headphones even if an external amplifier is not connected.


AC IN
POWER ON
USB
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY
NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Foot Switch
FS-9H (optional)
Expression Pedal
EXP-50/50J/20/30
(optional)
SUZUKI
TO AC OUTLET
Powered Speakers
(optional)

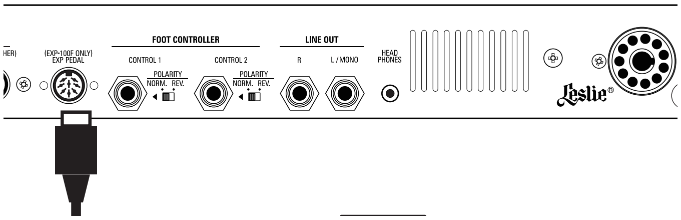
NOTE: The Expression Pedal and Foot Switch parameters must be set properly. For more information, consult the [CONTROL] section of this Manual.

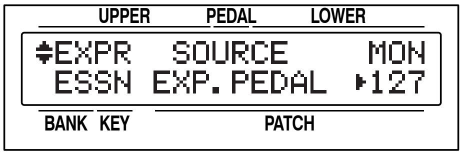
⚠CAUTION

Do not place the instrument in direct sunlight, near heat sources, or in a hot location. Doing so may result in damage to the instrument.

CONNECTING THE EXPRESSION PEDAL

◆ CONNECTING AN EXP-100F


(EXP-100F ONLY)
EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY
NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie

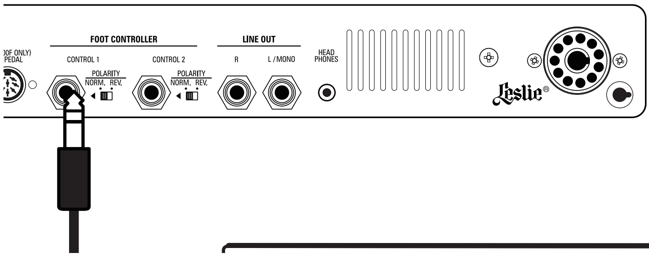

UPPER
PEDAL
LOWER
BANK
KEY
PATCH

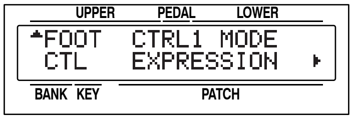
⇕EXPR SOURCE MON
ESSN EXP.PEDAL ▸127

Connect the EXP-100F to the EXP. PEDAL jack.

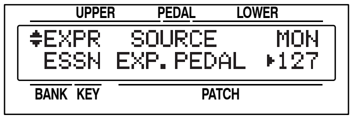
NOTE: In order to use the EXP-100F Expression Pedal, the EXP-SOURCE switch in the CONTROL Edit Menu must be set either to "EXP. PEDAL" or "BOTH." This is explained on page 123.

◆ CONNECTING AN EXP-50/50J/20/30


FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY
NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie


UPPER
PEDAL
LOWER
BANK
KEY
PATCH

⇞FOOT CTRL1 MODE
CTL EXPRESSION ▸

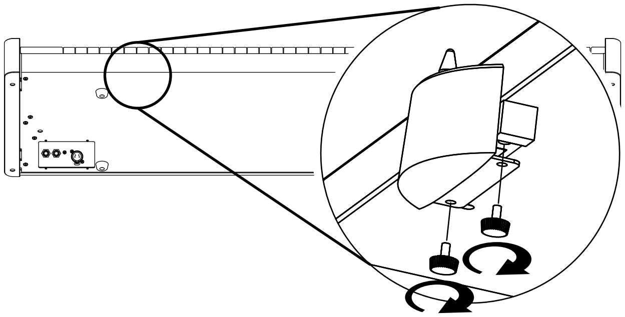

UPPER
PEDAL
LOWER
BANK
KEY
PATCH

⇕EXPR SOURCE MON
ESSN EXP.PEDAL ▸127

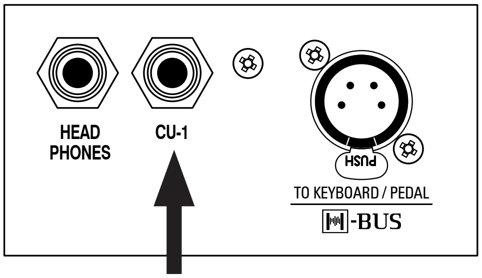
1. Make sure the power to the instrument is "OFF."
2. Connect the EXP-50/20/30 to either the CONTROL 1 or CONTROL 2 jack.
3. Set the [POLARITY] at "NORM."
4. Turn the power to the instrument "ON."

NOTE: In order to use the EXP-50, EXP-50J, EXP-20 or EXP-30, the CONTROL MODE switch in the CONTROL Edit Menu must be set to "EXPRESSION." This is explained on page 122.

CONNECTING THE CU-1 LESLIE SWITCH (purchased separately)



Use the two thumbscrews provided with the CU-1 to secure it to the underside of the Lower Manual.

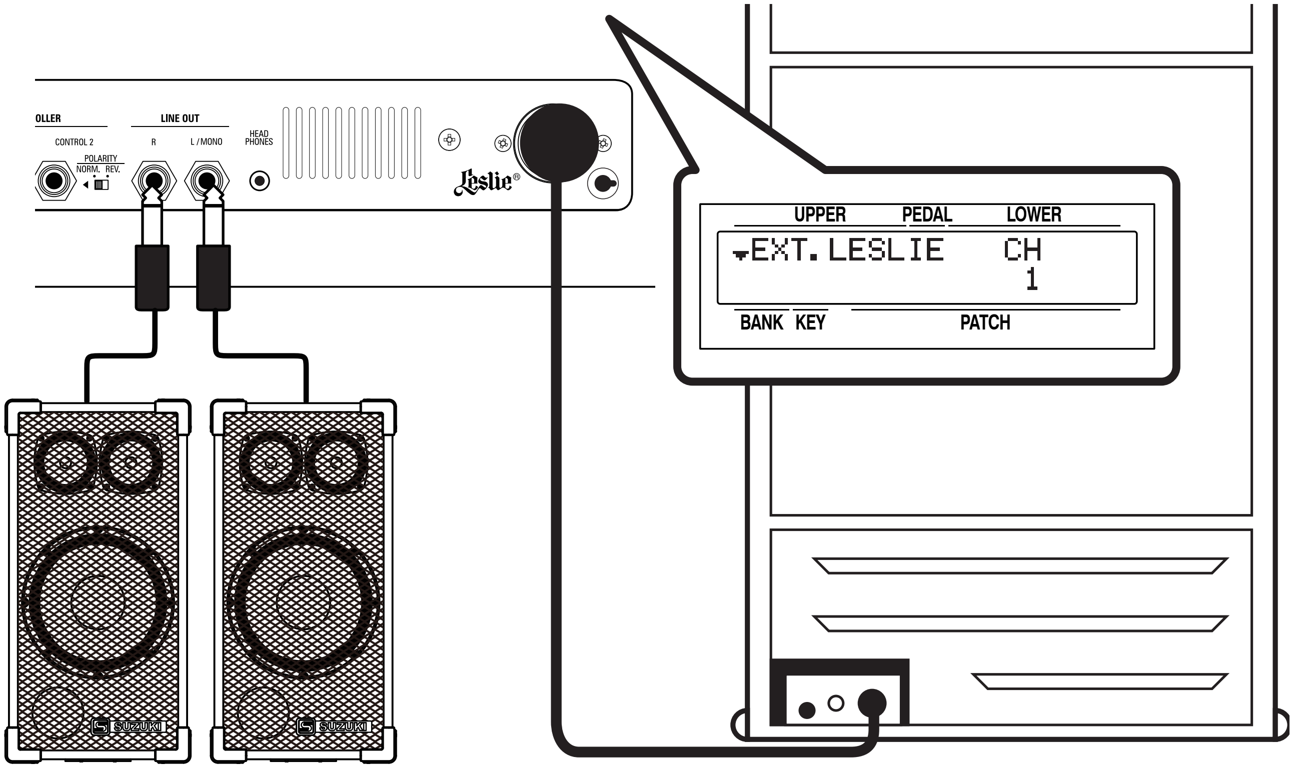

HEAD PHONES
CU-1
PUSH
TO KEYBOARD / PEDAL
-BUS

Connect the CU-1 to the CU-1 jack found on the recessed Accessory Panel (see page 12).

CONNECTING A LESLIE SPEAKER

A Leslie speaker with an 11-pin interface can be directly connected to this keyboard.

CONNECTING A SINGLE-CHANNEL LESLIE SPEAKER



EXT.LESLIE CH
1

BASIC CONNECTION

1. Set the LESLIE - EXT. LESLIE CH at “1.” See page 76 for instructions on how to do this.
2. Connect the Leslie Cabinet to the XK-5 using the 11-pin cable.
3. Make sure the [BYPASS] Touch Button is “OFF” (LED not lit) and set the volume of the Leslie Speaker at the level desired.

WHAT IS A “STATIONARY SPEAKER?”

A “Stationary Speaker” is a speaker with no rotating baffles, such as a separate amplifier or the non-rotary channel(s) of a multi-channel Leslie Speaker.

The XK-5 has a built-in digital Leslie system which provides the essential sound even without the presence of a Leslie Speaker cabinet. We recommend the Leslie 2121, Leslie LS-2215 or Leslie LS-2210 Keyboard Amplifiers for these applications; however, any high-quality keyboard amp may be used.

1. Connect the LINE OUT jacks on the XK-5 to the desired inputs on the Leslie amp (or your chosen amp).
2. Be sure the [BYPASS] Touch Button is “OFF.” Use the normal Leslie functions.

NOTE: If you wish, you can use a single cable for MONO operation. In this case, use the L/MONO jack.

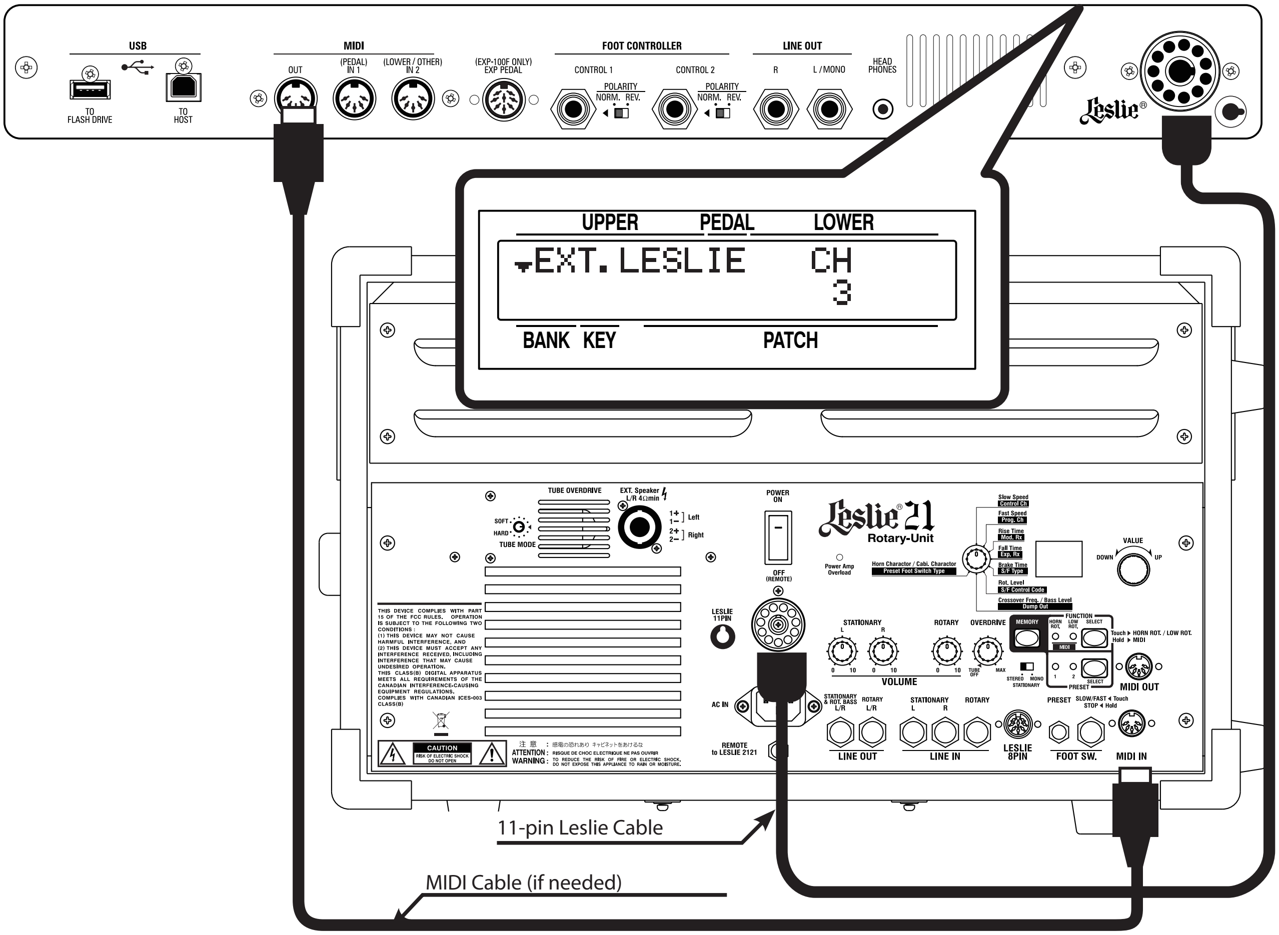
ADDING STATIONARY SPEAKERS

You can create the effect of a Leslie Speaker used in conjunction with a non-rotary tone cabninet by connecting a separate ampplifier to the instrument via the LINE OUT jacks.

1. Repeat steps 1 to 3 above.
2. Turn the [BYPASS] Touch Button “OFF” and set the [ROTARY VOLUME] control of the 2101/2101mk2 at the desired volume.

   NOTE: If you are using either a single-channel Leslie Speaker along with a separate amplifier or a multi-channel Leslie Speaker such as the 2101/2101mk2, turn the [BYPASS] Touch Button “ON” and “OFF” repeatedly and play notes to balance the Rotary and Stationary channels against each other.

CONNECTING A MULTI-CHANNEL LESLIE SPEAKER


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie
Leslie 21 Rotary-Unit
TUBE OVERDRIVE
EXT. Speaker L/R 4Ω min
POWER ON
OFF (REMOTE)
LESLIE 11PIN
STATIONARY
ROTARY
OVERDRIVE
VOLUME
MEMORY
FUNCTION
VALUE
DOWN
UP
MIDI OUT
AC IN
REMOTE to LESLIE 2121
LINE OUT
LINE IN
LESLIE 8PIN
FOOT SW.
MIDI IN
CAUTION

UPPER PEDAL LOWER
EXT. LESLIE CH 3
BANK KEY PATCH

11-pin Leslie Cable

MIDI Cable (if needed)

BASIC CONNECTION

Multi-channel Leslie speakers are equipped with a Stationary speaker system, independent of the Rotary channel to provide direct organ sounds.

To connect a multi-channel Leslie Speaker such as the model 2101 or 2101mk2, do the following:

1. Set the EXT. LESLIE CH parameter at “3.” See page 76 for instruxtions on how to do this.
2. Connect the Leslie Cabinet to the XK-5 using the 11-pin cable.
3. Turn the [BYPASS] Touch Button “ON” and set the [STATIONARY VOLUME] control of the 2101/2101mk2 to the desired volume.
4. Turn the [BYPASS] Touch Button “OFF” and set the [ROTARY VOLUME] control of the 2101/2101mk2 at the desired volume.

MIDI CONTROL OF THE LESLIE SPEAKER

To control the parameters of the Leslie Speaker #2101/#2101mk2 (fine adjustment of the rotor speed or the rise time, etc.):

1. Connect the MIDI OUT of the XK-5with the MIDI IN of the Leslie speaker with a MIDI cable.
2. Set the UPPER Keyboard Channel and the Leslie MIDI channel to the same channel (P. 135).

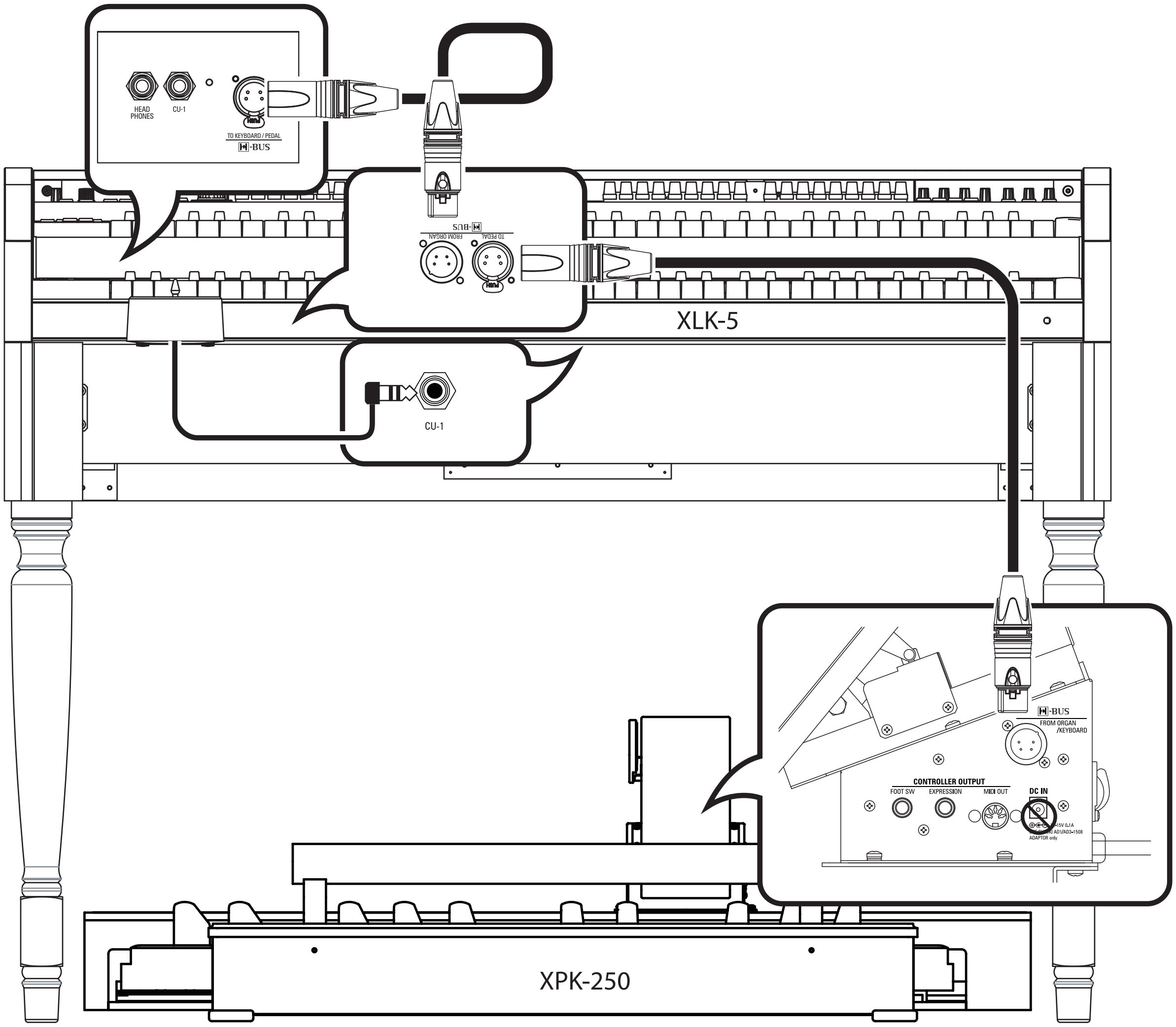
   NOTE: Please consult the MIDI section of this Guide as well as the Owner’s Guide for the Leslie 2101/2101mk2 for instructions on how to do this.

When this unit detects that the Leslie speaker is connected, the Leslie Parameters sent out MIDI from the XK-5 will control the performance of the connected Leslie speaker.

EXPANDING THE XK-5

The XK-5 Drawbar Keyboard can be made into a complete console organ by connecting an external keyboard and pedal clavier.

2 MANUALS AND PEDALS (USING XLK-5 AND XPK-250)


HEAD PHONES
CU-1
TO KEYBOARD / PEDAL
H-BUS
FROM ORGAN
TO PEDAL
H-BUS
XLK-5
CU-1
H-BUS
FROM ORGAN /KEYBOARD
CONTROLLER OUTPUT
FOOT SW
EXPRESSION
MIDI OUT
DC IN
15V 0.1A
AD1/AD3-1508
ADAPTOR only
XPK-250

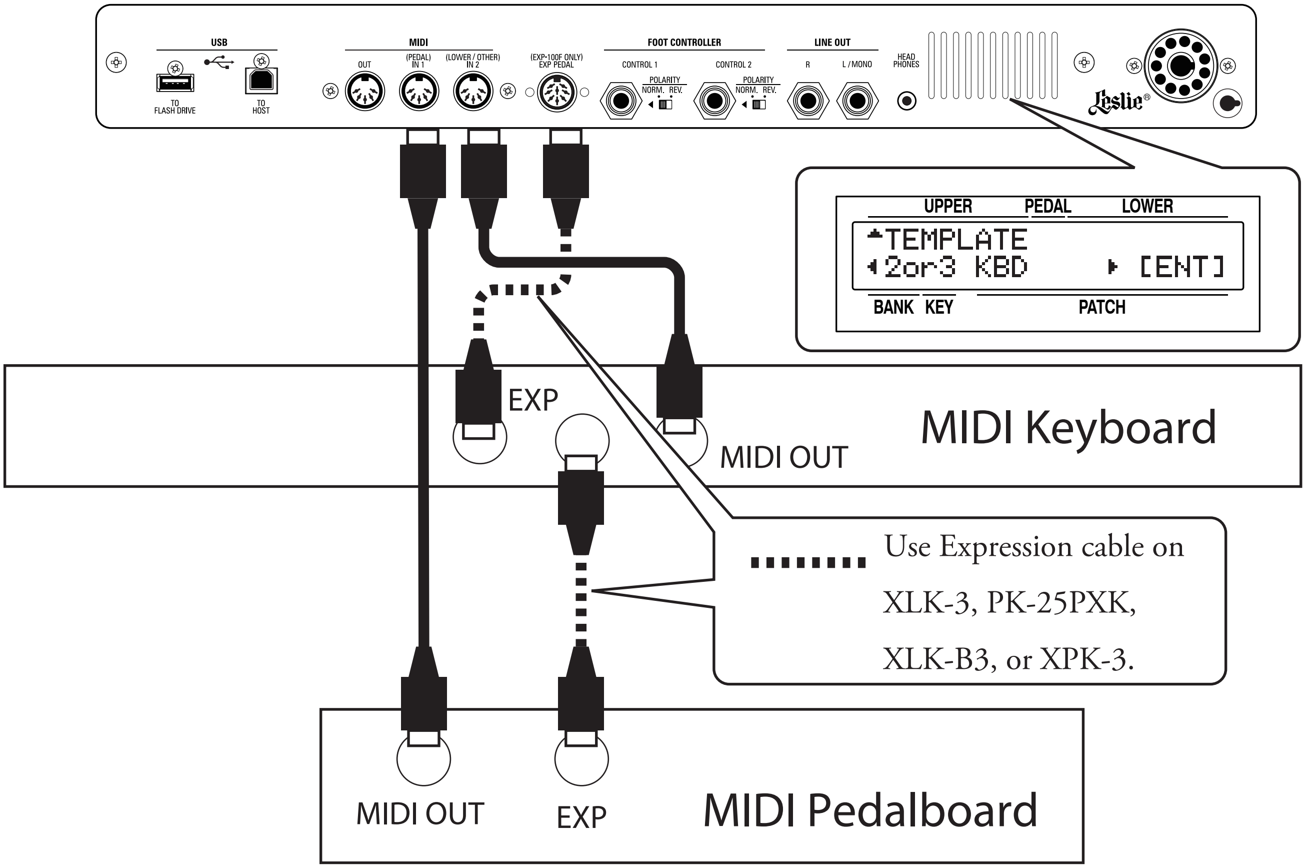
1. Connect the H-BUS cables as shown in the diagram above.

   IMPORTANT: The H-BUS interface provides for DC power as well as system communication, therefore it is not necessary to utilize the "DC IN" jack when connecting to the XK-5. In addition, no special configuration is required. Each device is configured automatically.

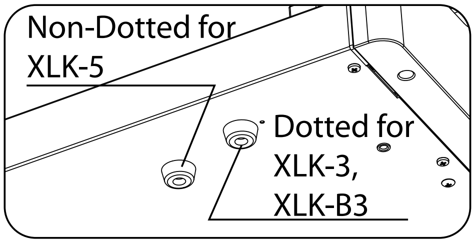
   NOTE: The above diagram shows only the connections for the Pedal Clavier and Expression Pedal. For information on other connections such as AC power, audio, Leslie, etc., see page 18.

2. Turn the power to the instrument "ON."

2 MANUALS AND PEDALS (USING MIDI KEYBOARD & PEDAL CLAVIER)


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY NORM. REV.
POLARITY NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie
UPPER
PEDAL
LOWER
TEMPLATE
2or3 KBD
[ENT]
BANK
KEY
PATCH
EXP
MIDI OUT
MIDI Keyboard
MIDI OUT
EXP
MIDI Pedalboard

▪▪▪▪▪▪▪▪ Use Expression cable on XLK-3, PK-25PXK, XLK-B3, or XPK-3.


Non-Dotted for XLK-5
Dotted for XLK-3, XLK-B3

The diagram on the left shows where to position the rubber feet on the bottom of the XK-5 to match the Hammond keyboard you wish to use as a Lower Manual. Use a #2 Phillips screwdriver to unscrew and relocate the feet if necessary.

1. Connect the MIDI cables as shown in the diagram above.

NOTE: The above diagram shows only the connections for the Pedal Clavier and Expression Pedal. For information on other connections such as AC power, audio, Leslie, etc., see page 18.

2. Turn the power to the instrument “ON.”

3, Go into the MIDI Edit Menu and select “2or3 KBD” as a MIDI Template. See page 135 for instructions on how to do this.

NOTE: If a MIDI Template other than “Basic” such as “2or3 KBD” is recalled, a connected MIDI Keyboard or Pedal Clavier function as “Local” keyboards of this system. All MIDI data - Note On/Off, etc. - is transmitted from the MIDI OUT of the XK-5.

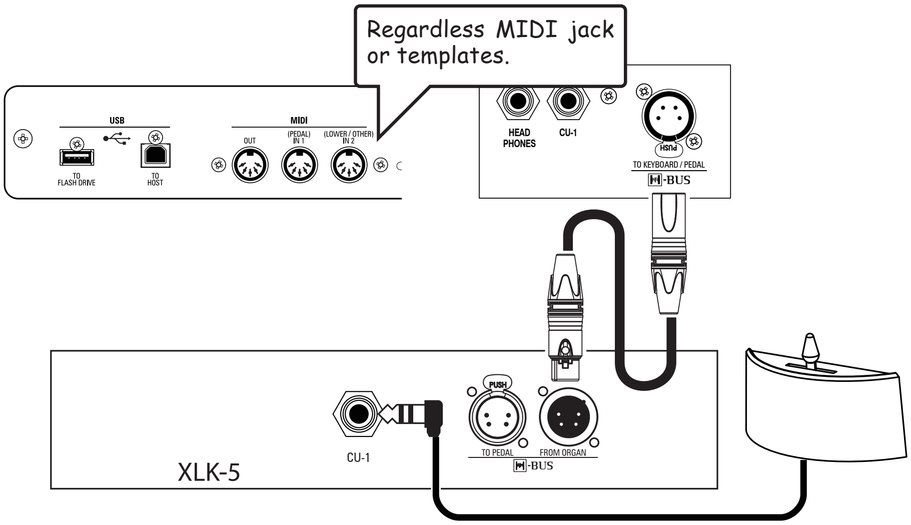
NOTE: In the configuration shown above, the connected MIDI Keybaord and Pedal Clavier will work as Lower Manual and Pedals, respectively. If you wish to use the connected MIDI keyboard as the Upper Manual, the MIDI IN mode of the MIDI Edit Menu must be set to “UPPER.” See page 135 for instructions on how to do this.

◆ RECOMMENDED MIDI KEYBOARDS

The following Hammond MIDI keyboards and Pedal Claviers will work with the XK-5:

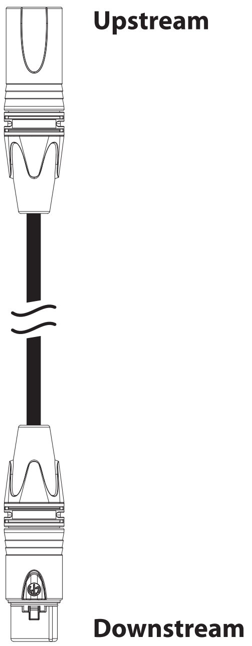
- Lower keyboard unit XLK-3, XLK-B3
- MIDI Pedal Clavier XPK-100 (13 keys)
- MIDI Pedal Clavier XPK-200 (20 keys), XPK-200L (20 keys with wooden naturals)

2 MANUALS WITH XLK-5 LOWER MANUAL


Regardless MIDI jack or templates.
USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
HEAD PHONES
CU-1
PUSH
TO KEYBOARD / PEDAL
H-BUS
XLK-5
CU-1
PUSH
TO PEDAL
FROM ORGAN
H-BUS

1. Connect the H-BUS cable as shown in the diagram above.
2. Turn the power to the instrument “ON.”

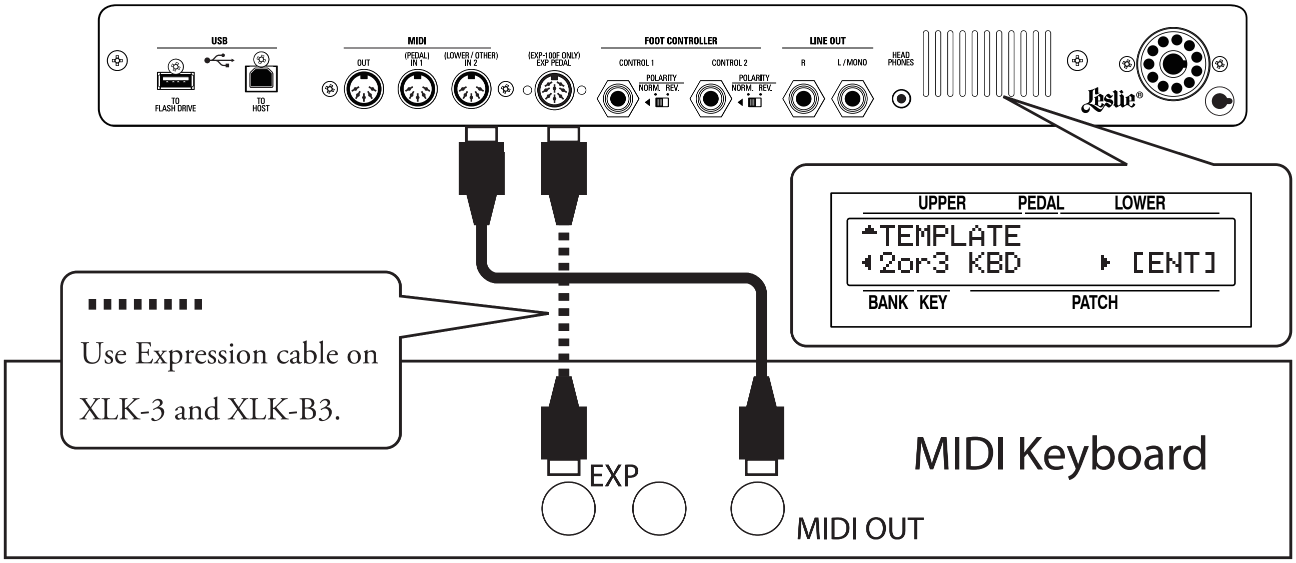
H-BUS


Upstream
Downstream

This keyboard uses Hammond’s new H-BUS interface which supplies both DC power and data transfer using a single connection.

IMPORTANT: Use the H-BUS cable provided with this instrument for all H-BUS connections. DO NOT use a 4-pin XLR or other type of connector. Doing so may result in damage to the instrument.

2 MANUALS WITH MIDI KEYBOARD


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie®
UPPER
PEDAL
LOWER
TEMPLATE
2or3 KBD
[ENT]
BANK
KEY
PATCH
EXP
MIDI OUT
MIDI Keyboard

▪▪▪▪▪▪▪▪ Use Expression cable on XLK-3 and XLK-B3.

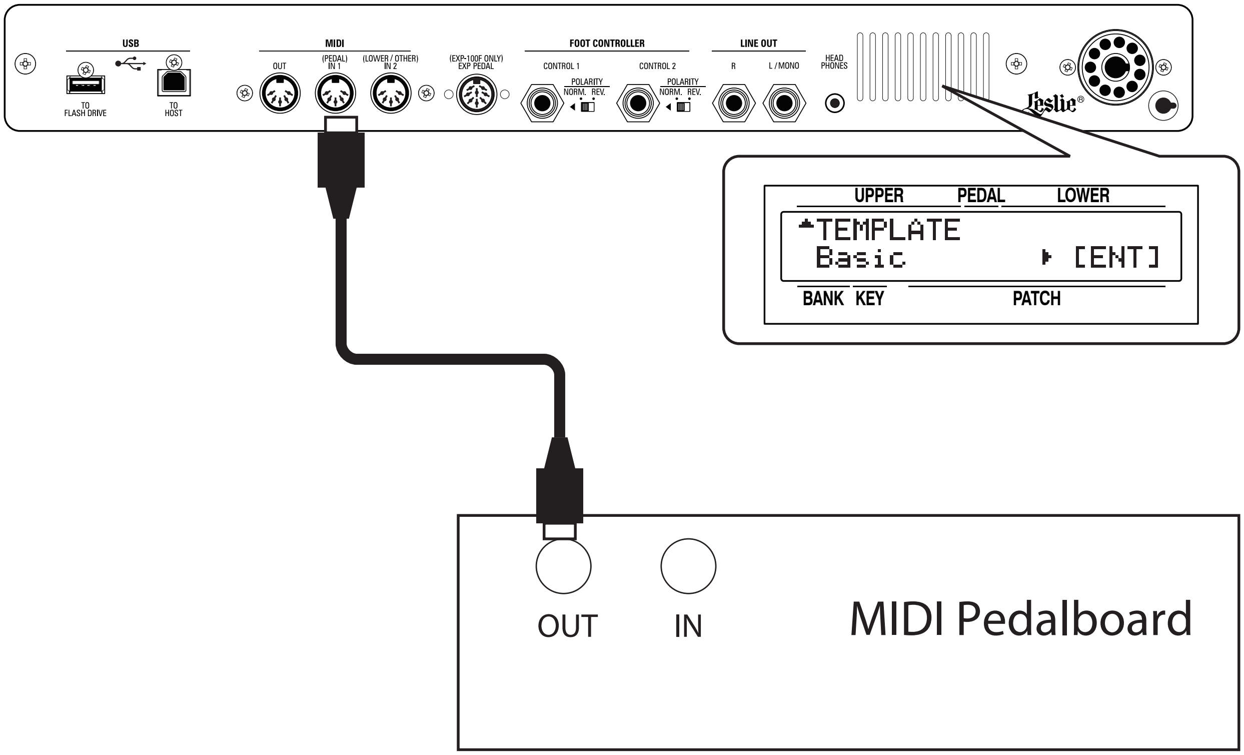
1. Connect the MIDI cables as shown in the diagram above.
2. Turn the power to the instrument “ON.”

3, Go into the MIDI Edit Menu and select “2or3 KBD” as a MIDI Template. See page 135 for instructions on how to do this.

NOTE: If a MIDI Template other than “Basic” such as “2or3 KBD” is recalled, a connected MIDI Keyboard or Pedal Clavier will function as a “Local” keyboard. All MIDI data - Note On/Off, etc. - is transmitted from the MIDI OUT of the XK-5.

NOTE: In the configuration shown above, the connected MIDI Keyboard will work as the Lower Manual. If you wish to use the connected MIDI keyboard as the Upper Manual, the MIDI IN mode of the MIDI Edit Menu must be set to “UPPER.” See page 135 for instructions on how to do this.

SINGLE MANUAL WITH MIDI PEDAL CLAVIER


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY
NORM. REV.
POLARITY
NORM. REV.
LINE OUT
R
L / MONO
HEAD PHONES
Leslie®
UPPER
PEDAL
LOWER
TEMPLATE
Basic
[ENT]
BANK
KEY
PATCH
OUT
IN
MIDI Pedalboard

1. Connect the MIDI cable as shown in the diagram above.
2. Turn the power to the instrument "ON."
3, Go into the MIDI Edit Menu and select "Basic" as a MIDI Template. See page 135 for instructions on how to do this.

SPECIAL NOTE - MODEL A-3

You will find described on pages 22 through 26 of this Guide procedures for expanding the single-manual XK-5 to include a Lower Manual, a Pedal Clavier, and so on. However, if yours is an A-3 Organ, you may skip these steps.

The Model A-3 consists of the XK-5, which serves as the Upper Keyboard, a dedicated Lower Manual model XLK-5, a 25-note Pedal Clavier model XPK-250, an Expression Pedal model EXP-250 and a Bench - a complete organ, in other words. The designation, "A-3" is an homage to two classic Hammond Organs - "A" for the original Hammond Organ (the Model A introduced in 1935) and "-3" in reference to the B-3 and C-3. The "A" designation also refers to the fact that the cabinet is several inches shallower than a "B" style or "C" style cabinet.

All of the feature descriptions with the exception of the SPLIT feature apply equally to the XK-5 single-manual instrument and the A-3 Organ. Since the A-3 is a complete two-manual-and-pedal organ, the SPLIT feature does not apply. It is not needed due to the dedicated Lower Manual of the A-3. Therefore the SPLIT feature applies to the XK-5 single-manual instrument ONLY.

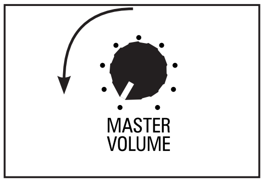
TURN ON & PLAY

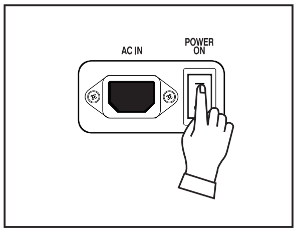
POWER ON

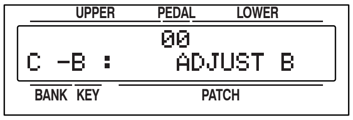
HOW TO POWER ON

Follow the procedures below for powering on your XK-5.

NOTE: In order to avoid possible damage, be sure you have connected a sound source - either a keyboard amplifier or a Leslie Speaker cabinet - before powering the XK-5 "ON."







1. Before turning the power "ON," make sure you have connected all peripherals (Expression Pedal, Foot Switch(es), etc.) properly and set the [MASTER VOLUME] Rotary Knob to its minimum setting.
2. Turn the power to the instrument "ON." The display will show the opening screen for approximately 2 seconds, then the PLAY Mode screen will display.

   NOTE: In order to protect the circuits, the instrument will be ready to play about 6 seconds after the power is turned "ON."
3. After you have turned the XK-5 power "ON," turn the power to the connected amplifier "ON."

   NOTE: If you have a Leslie Speaker connected to the instrument, the Leslie will turn "ON" automatically.
4. Touch any Preset Key from "C♯" through "A." These are the Preset Keys with pre-registered Drawbar settings.
5. Holding down a key, adjust the [MASTER VOLUME] Rotary Knob.

   NOTE: The "C," "A#" and "B" Preset Keys normally do not produce sound when the keyboard is first turned "ON" and no Drawbars are out. Pull Drawbars out when using the "A#" or "B" Preset Keys, or press any of the other Preset Keys from "C♯" through "A" to hear a sound when keys are pressed. (The "C" key is normally used as a Cancel key.)
6. Adjust the volume of the amplifiers etc.

   NOTE: Reverse the above steps when you turn the power "OFF." Also, be sure to turn the power to a connected amplifier "OFF" before turning the organ "OFF."

BACK UP

The organ will "remember" the status of all of the playing controls at the time the power is turned "OFF." When the instrument is next turned "ON," all of the controls and features will return to that state.

AUTO POWER OFF

The XK-5 has an "AUTO POWER OFF" feature which will automatically turn the power on the instrument "OFF" if no keys or buttons are pressed for 30 minutes.

To cancel/set the AUTO POWER OFF function, see "SYSTEM" P. 128.

NOTE: Depending on the status of this unit - while editing, for example - the power may not turn "OFF," even if the set time of AUTO POWER OFF elapses. Therefore, it is best to turn the power to the instrument "OFF" manually after every use.

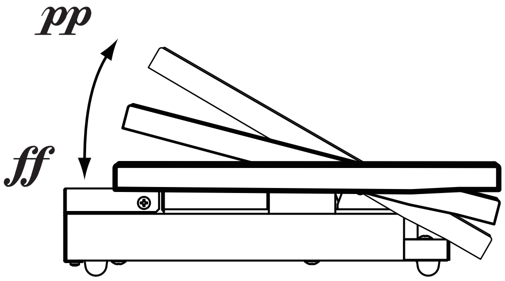
RESET TO FACTORY SETTINGS

To reset all parameters of the organ to their default settings, do the following:

1. Turn the organ power "OFF."
2. Press and Hold the [RECORD] Touch Button.
3. While holding the [RECORD] Touch Button, turn the organ power "ON." The display will first show the openning screen, then it will show the following message for about 1 second:

   Loading Default...
4. When the above message disappears, the PLAY Mode will display. The factory settings have been restored.

Expression Pedal

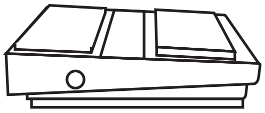


EXP-50/50J/20/30 (optional)

The Expression Pedal controls the overall volume or loudness of the organ. Press forward with the front of your foot to increase the volume and back with your heel to decrease the volume.

NOTE: The performance of the Expression Pedal can be tailored in various ways. These are described on page 123.

Foot Switch

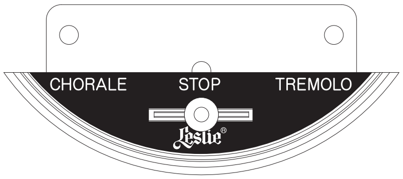


FS-9H (optional)

You can use a Foot Switch to control various functions - for example, switching between "Slow and "Fast" Leslie rotor speeds, sustaining or "damping" notes, etc.

NOTE: For information about how to set the Foot Switch function assignment, see page 122.

CU-1 LESLIE MODE SWITCH (Optional)

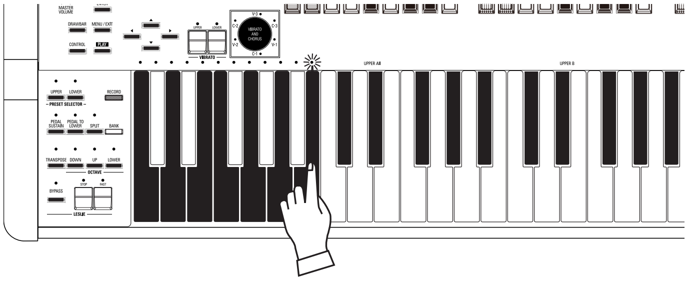


The CU-1 Leslie Mode Switch allows the player to switch the speeds of the Leslie rotors from Chorale ("Slow") to Tremolo ("Fast") to Stop (rotors do not turn).

MAKE YOUR OWN SOUND

In this section you'll see how to create your own sound. This example is that of a classic jazz organ.

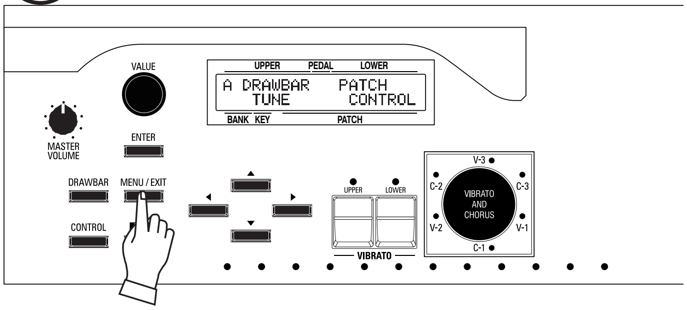
SELECT THE "B" Preset Key


MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO
UPPER AB
UPPER B
UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
UP
LOWER
OCTAVE
BYPASS
STOP
FAST
LESLIE

First, select the "B" Preset Key (LED lit).

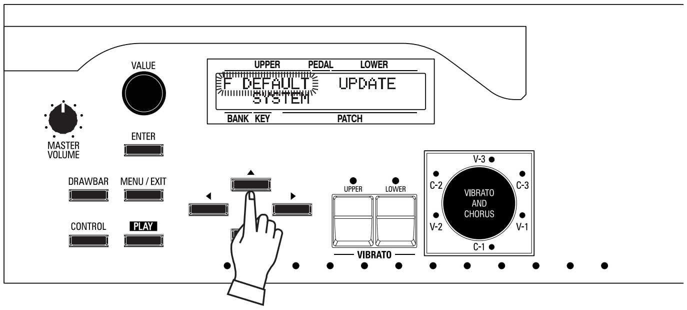
The "A#" and "B" Preset Keys are also called "Adjust Presets." When one of these is selected, whatever tone color is set up on the Drawbar set associated with that key will sound (see the diagram on page 47). In addition, all the current control panel settings become active, allowing for real-time registration, and the creation of new Patches.

1 LOCATE THE MENU Mode


VALUE
UPPER
PEDAL
LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

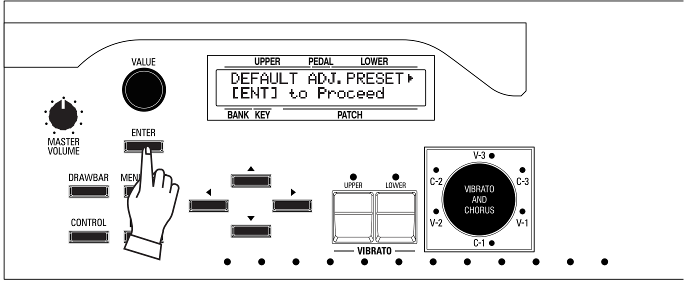
Press the [MENU/EXIT] Touch Button. The "A" screen of the MENU Mode should now appear. (If it does not, press the [PLAY] Touch Button, then press the [MENU/EXIT] Touch Button.)

2 GO TO THE "F" SCREEN


VALUE
UPPER
PEDAL
LOWER
F DEFAULT UPDATE
SYSTEM
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [▲] Touch Button 5 times. The "F" screen will display and the word `DEFAULT` will blink.

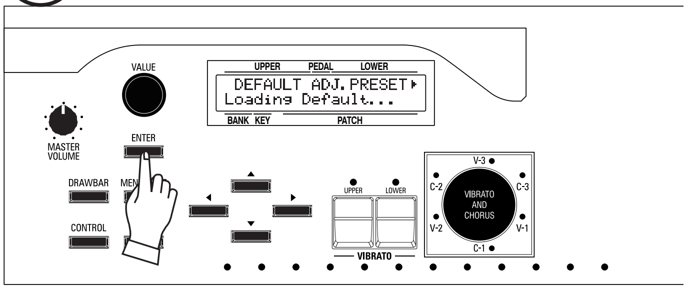
3 ENTER DEFAULT FUNCTION MODE


VALUE
UPPER
PEDAL
LOWER
DEFAULT ADJ.PRESET ▸
[ENT] to Proceed
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [ENTER] Touch Button.

The words `DEFAULT ADJ. PRESET` will display.

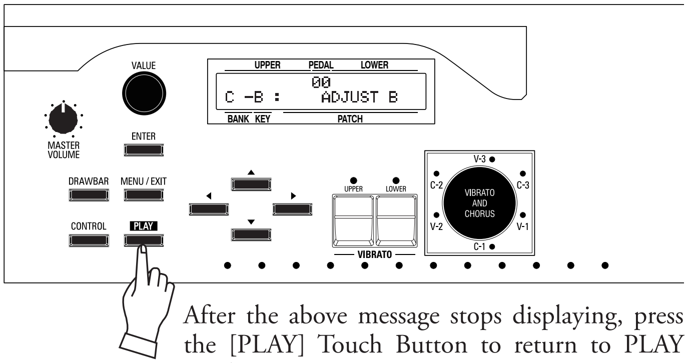
4 INITIALIZE THE PRESET KEYS


VALUE
UPPER
PEDAL
LOWER
DEFAULT ADJ.PRESET ▸
Loading Default...
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MEN
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [ENTER] Touch Button.

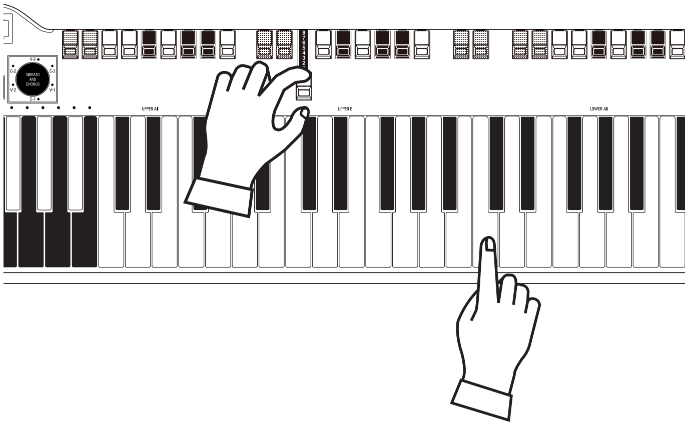
The display will show `Loading Default...` for approximately 1 second.

5 Return to PLAY Mode


VALUE
UPPER
PEDAL
LOWER
00
C -B : ADJUST B
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

After the above message stops displaying, press the [PLAY] Touch Button to return to PLAY Mode.

PULL OUT THE “B” DRAWBARS



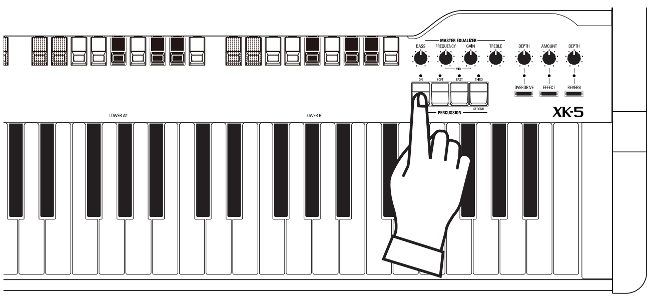
The Drawbars make the fundamental organ sound of this keyboard. The tone changes in relation to how far the Drawbars are “pulled.”

The volume of each sound is greatest when the Drawbar is pulled out all the way, and null when fully pushed in. The Drawbars are arranged so that the pitches go higher from left to right.

For this example, pull the 16´, 5 ⅓´ and 8´ Drawbars to “8” (all the way out).

NOTE: The current registration is displayed in the PLAY Mode. (P. 37)

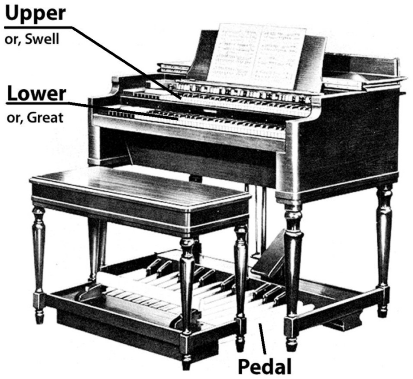
ADD “TOUCH-RESPONSE PERCUSSION”



Hammond’s Touch-Response Percussion adds a percussive attack to the Tone Wheel/Drawbar sounds. The effect is similar to a harp or bells. Percussion is available only on the Upper Manual and normally only when the “B” Preset Key is engaged (red LED “ON”). The four Touch Tabs (from left to right) select Percussion “ON” or “OFF,” Normal or Soft Volume, Fast or Slow Decay, and Second or Third Harmonic tone quality.

For this example turn all of the Percussion Touch Tabs)[ON], [THIRD], [FAST], [SOFT]) “ON” (red LEDs lit).

“UPPER” and “LOWER” MANUALS



The diagram on the left shows the basic traditional configuration of a Hammond Organ. On tone-wheel Hammond Organs of the “B-3” type, pipe organ terminology was used - the Upper Manual (Keyboard) was the “Swell,” and the Lower Manual (Keyboard) was the “Great.” On classical pipe organs having two or more manuals, each manual played a different set of pipes, thereby making it possible to change sounds quickly and easily,

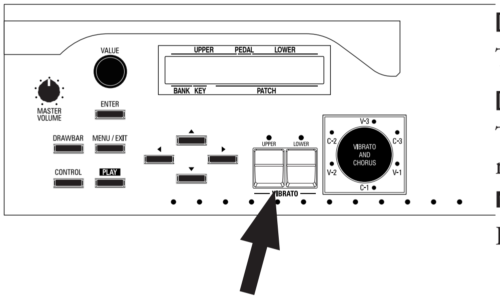
The single keyboard of the XK-5 can be played as a two-manual organ by using the SPLIT feature to divide the keyboard in “half,” with the “Upper” Manual (Keyboard) on the right side, and the “Lower” Manual (Keyboard) on the left, with different sounds for each. This is so that a keyboard player can have different sounds immediately available.

NOTE: You can also play the Pedal tones from the manual using the PEDAL TO LOWER feature.

NOTE: Throughout this Guide, the terms, “UPPER,” “LOWER,” and “PEDALS” will be used for their respective Manuals or Pedals.

ADD EFFECTS

◆ VIBRATO AND CHORUS


VALUE
UPPER PEDAL LOWER
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-3
V-1
C-1
V-2
C-2
VIBRATO AND CHORUS

These controls add the Hammond Vibrato/Chorus effect to the sound.

[UPPER], [LOWER] Touch Tabs

Turn the Vibrato & Chorus effect "ON"(LED lit) or "OFF" for each Manual.

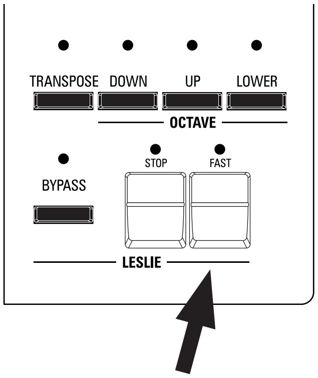
[VIBRATO AND CHORUS] Rotary Knob

This allows you to select the Vibrato/Chorus modes. The letter "V" means Vibrato, "C" means Chorus and the number means width of Vibrato or Chorus.

NOTE: You can adjust the speed of the Vibrato/Chorus.

For this example, turn the [UPPER] Touch Tab "ON" and select "C-3."

◆ LESLIE


TRANSPOSE
DOWN
UP
LOWER
OCTAVE
BYPASS
STOP
FAST
LESLIE

The Leslie effect is the famous "360 degree Sound" provided by speakers with rotating baffles, accomplished by digital means with no moving parts.

[FAST] Touch Tab

Toggles between "FAST" (LED lit) or "SLOW" Leslie rotor speed.

[STOP] Touch Tab

Toggles between "STOP" (LED lit) or "SLOW" when the [FAST] Touch Tab is "OFF."

NOTE: These controls perform the same functions when a Leslie Speaker cabinet is connected via the 11 pin plug.

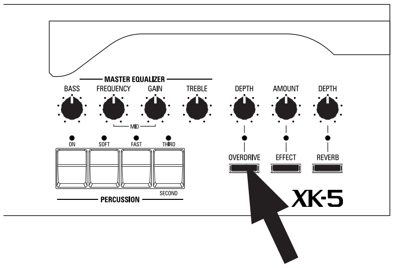
[BYPASS] Touch Button

Disengages the Leslie effect resulting in a "straight" organ sound.

NOTE: The [BYPASS] Touch Button will have no effect if the instrument is connected to a Leslie Speaker Cabinet via the 11-pin jack.

For this example, turn all three Leslie controls "OFF" (LEDs not lit).

◆ OVERDRIVE


MASTER EQUALIZER
BASS
FREQUENCY
GAIN
TREBLE
DEPTH
AMOUNT
DEPTH
MID
ON
SOFT
FAST
THIRD
OVERDRIVE
EFFECT
REVERB
PERCUSSION
SECOND
XK-5

Using Overdrive will add warmth at low settings, and "grit" or distortion at higher.

[OVERDRIVE ON] Touch Button

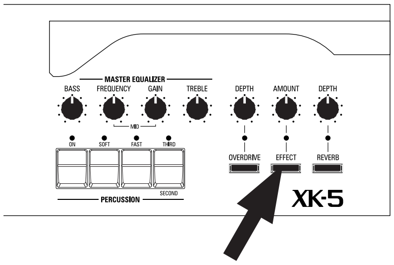
Turns the Overdrive effect "ON" or "OFF."

[DEPTH] Rotary Knob

Adjusts the amount of Overdrive. The amount increases as you rotate the Rotary Knob clockwise.

For this example, turn the [OVERDRIVE] Touch Button "ON" (LED lit) and turn the [OVERDRIVE] Rotary Knob to about the "10 o'clock" position.

◆ MULTI EFFECT


MASTER EQUALIZER
BASS
FREQUENCY
GAIN
TREBLE
DEPTH
AMOUNT
DEPTH
MID
ON
SOFT
FAST
THIRD
OVERDRIVE
EFFECT
REVERB
PERCUSSION
SECOND
XK-5

Adjusts the amount of the selected Multi-Effect to be applied to the Drawbar sounds. The default Multi-Effect is "Tremolo."

[EFFECT ON] Touch Button

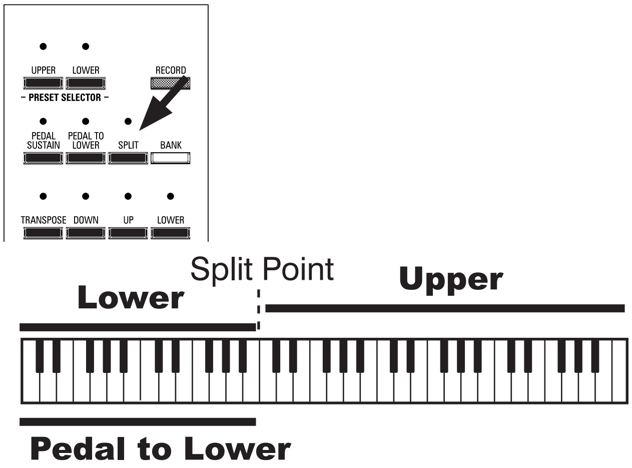
Turns the selected Multi-Effect "ON" or "OFF."

[AMOUNT] Rotary Knob

Adjusts the amount of Multi-Effect to be applied. The amount increases as you rotate the Rotary Knob clockwise.

In this example, the [EFFECT] Touch Button should be "OFF" (LED not lit)..

SPLIT - DIVIDE THE KEYBOARD BY PARTS


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
UP
LOWER
Split Point
Lower
Upper
Pedal to Lower

The XK-5 has only one Manual, but by using the SPLIT feature it can be made to perform as if it were a two-manual instrument.

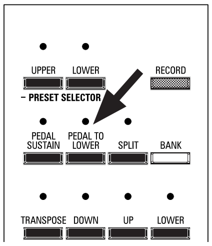
[SPLIT] Touch Button

To use the SPLIT feature, press the [SPLIT] Touch Button and the LED will turn "ON." The default Split point is between "2B" and "3C" (see the diagram on the left).

NOTE: You can change the SPLIT Point (dividing point) and Octave. See page 60 for instructions on how to do this

The area of the keyboard to the right of the Split point is referred to as UPPER and the left portion is LOWER.

PEDAL TO LOWER - ADD BASS TO LOWER


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
UP
LOWER

You can play the Pedals using the bottom notes of the Lower Manual.

PEDAL TO LOWER] Touch Button

To use the Pedal To Lower function, press the PEDAL TO LOWER] Touch Button so that the LED is lit. The Pedal tones will be heard in conjunction with the lowest note being played on the manual.

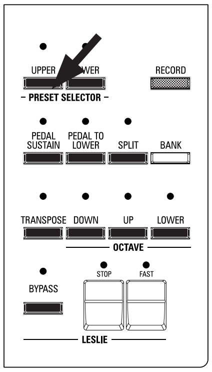
The default Pedal To Lower range is from "1C" (the lowest note on the Manual) to "2B" (the second "B" on the Manual counting from the left).

NOTE: You can change the playing range and characteristics of the PEDAL TO LOWER function. For more information consult page 51.

NOTE: When the XK-5 is expanded to 2 manuals, the Pedal To Lower function appears on the connected Lower Manual.

The tones produced by Pedal To Lower are controlled by the Pedal Drawbars.

PEDAL SUSTAIN - SMOOTH DECAY WHEN RELEASE


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
UP
LOWER
OCTAVE
BYPASS
STOP
FAST
LESLIE

A popular effect for organ bass is "PEDAL SUSTAIN," which adds a smooth decay reminiscent of a string bass.

[PEDAL SUSTAIN]

To turn this feature "ON," press the [PEDAL SUSTAIN] Touch Button so that the LED is lit. When you play and release either a pedal or a bass note on the Manual when using Pedal To Lower, the Pedal note will decay smoothly.

NOTE: You can adjust the PEDAL SUSTAIN length. For more information, see page 51.

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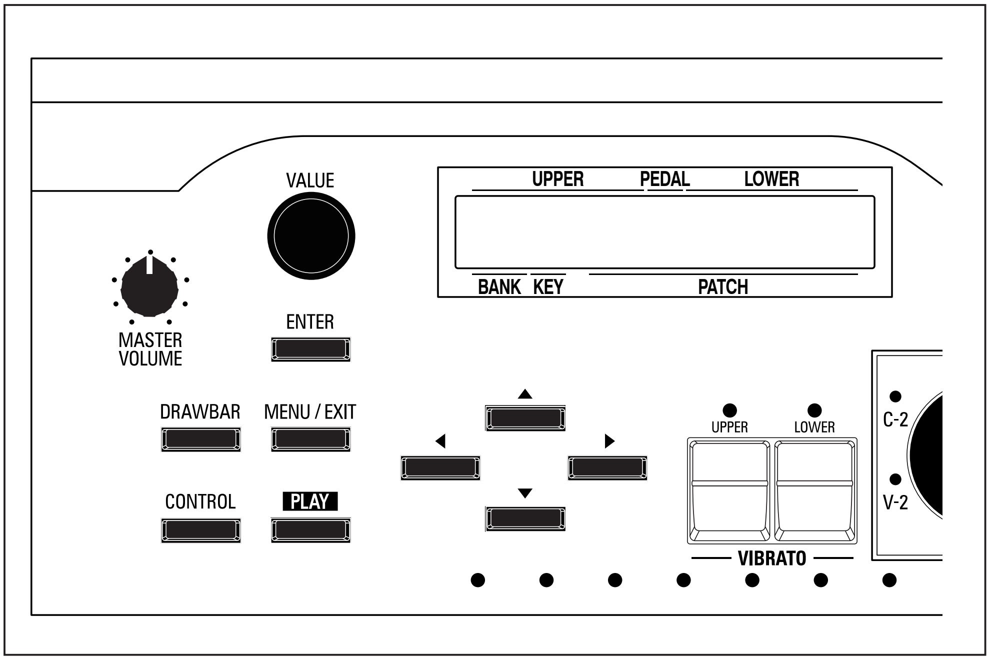
INFORMATION CENTER

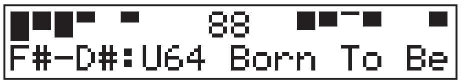
INFORMATION CENTER

All of the parameters and controls not accessed by the top panel Rotary Knobs and switches are here.


VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
C-2
V-2
VIBRATO

There are 3 modes - "PLAY," "MENU" and "FUNCTION."

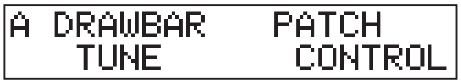
PLAY Mode



```
            88
F#-D#:U64 Born To Be
```

The PLAY Mode allows you to graphically see Drawbar settings, Patch Numbers and Patch Names.

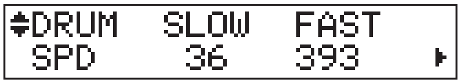
MENU Mode



```
A DRAWBAR   PATCH
   TUNE       CONTROL
```

The MENU Mode allows you to see the different Edit Menus where you can customize the instrument.

FUNCTION Mode



```
⇕DRUM  SLOW  FAST
 SPD     36   393   ▸
```

The FUNCTION Mode allows you to change specific parameters within each Edit Menu.

PLAY MODE

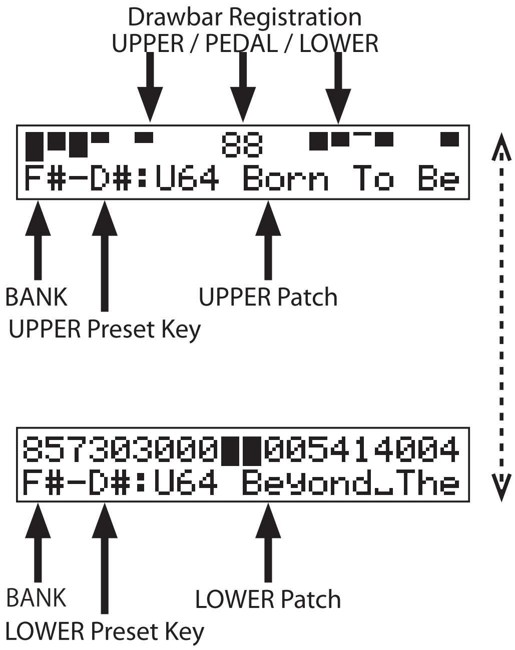
The PLAY Mode is the normal performance mode. The information necessary for ordinary performance will be displayed.

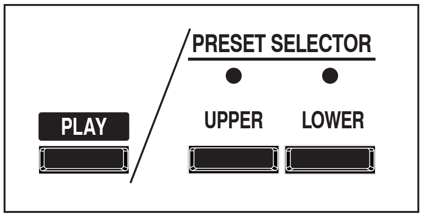
PLAY Mode is normally displayed when the instrument is first powered "ON." However, if you need to locate this mode from another display mode, touch the [PLAY] Touch Button.

HOW TO READ THE DISPLAY

Graphic Display

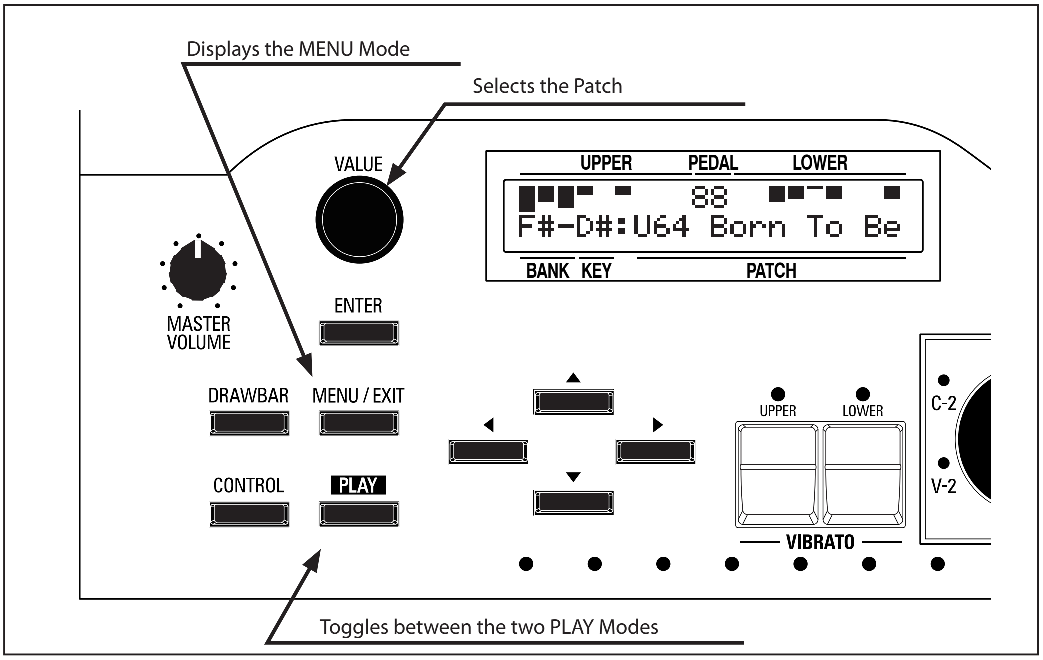
Numeric Display


Drawbar Registration
UPPER / PEDAL / LOWER
88
F#-D#:U64 Born To Be
BANK
UPPER Preset Key
UPPER Patch
857303000██005414004
F#-D#:U64 Beyond_The
BANK
LOWER Preset Key
LOWER Patch


PRESET SELECTOR
PLAY
UPPER
LOWER

The two PLAY Modes are toggled every time the [PLAY] Touch Button is pressed, or selected by the PRESET SELECTOR Touch Buttons.

OPERATION IN THIS MODE


Displays the MENU Mode
Selects the Patch
VALUE
UPPER
PEDAL
LOWER
88
F#-D#:U64 Born To Be
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
C-2
V-2
VIBRATO
Toggles between the two PLAY Modes

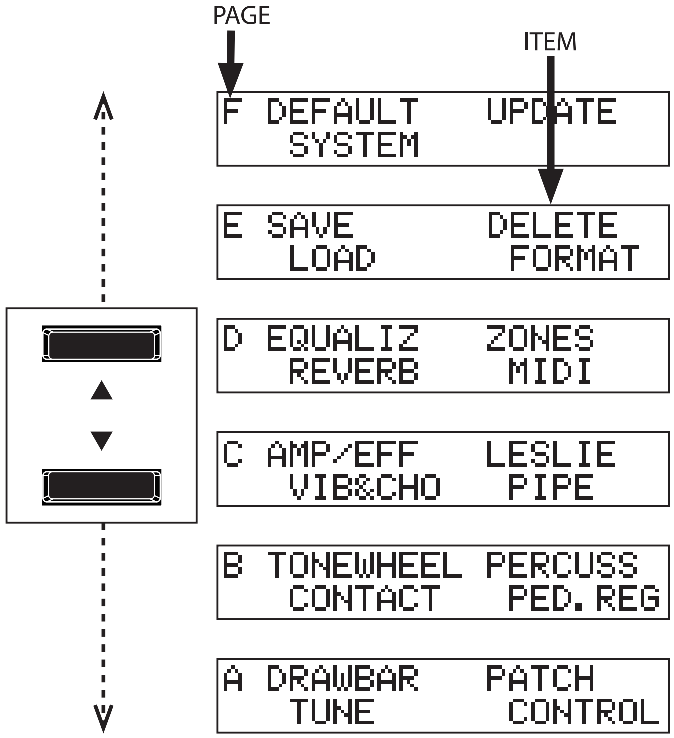
MENU MODE

The MENU Mode provides a directory of all the various functions.

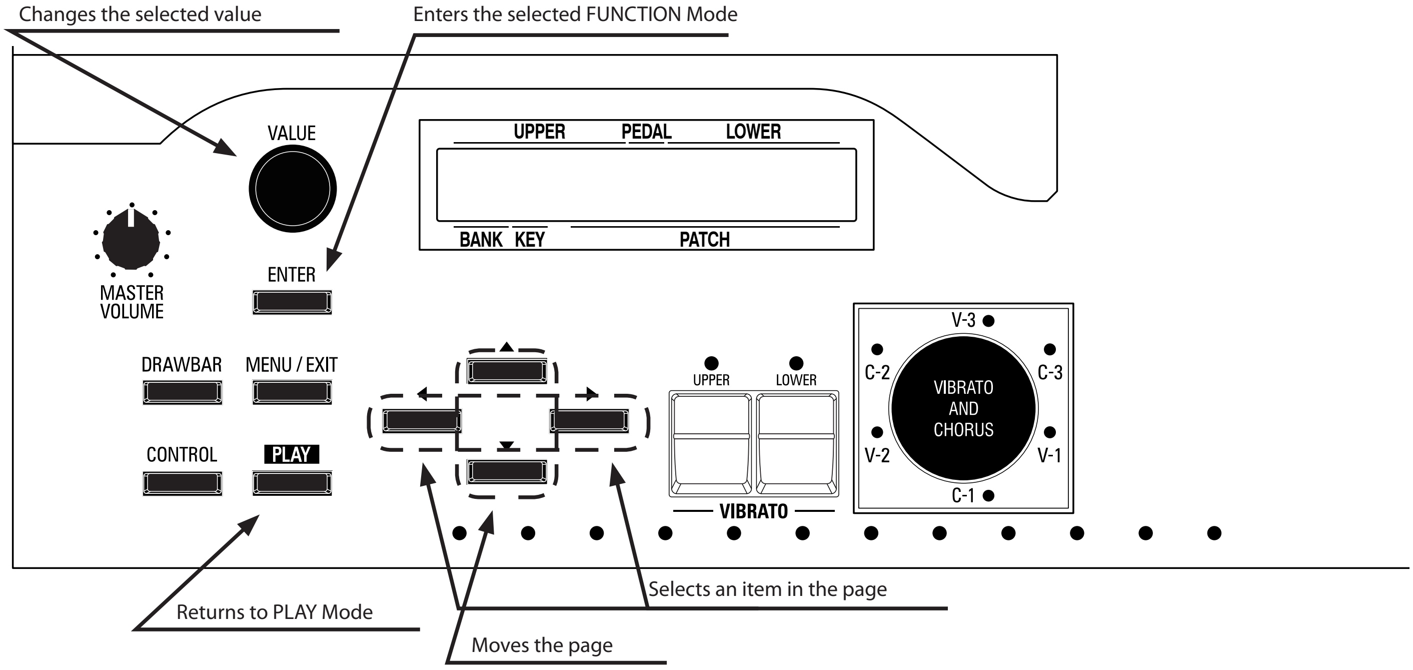
To locate this Menu, press the [MENU/EXIT] Touch Button. You will see the first screen ("A") of the MENU Mode.

There are 6 pages in the MENU Mode, labeled "A" through "F." Each page has up to four items. Select the item you wish to edit using the direction buttons, then press the [ENTER] Touch Button to enter the FUNCTION Mode for each item.

HOW TO READ THE DISPLAY


PAGE
ITEM
F DEFAULT UPDATE
SYSTEM
E SAVE DELETE
LOAD FORMAT
D EQUALIZ ZONES
REVERB MIDI
C AMP/EFF LESLIE
VIB&CHO PIPE
B TONEWHEEL PERCUSS
CONTACT PED.REG
A DRAWBAR PATCH
TUNE CONTROL

OPERATION IN THIS MODE


Changes the selected value
Enters the selected FUNCTION Mode
VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
Selects an item in the page
Returns to PLAY Mode
Moves the page

MENU MODE CONTENTS

MENU A

1. DRAWBAR

This allows you to set the parameters for the Drawbars of each Manual. (P. 52)

2. TUNE

This allows you to set the tuning and transpose of the entire instrument. (P. 121)

3. PATCH

This allows you to name Patches, assign Patch Parameters and select how Patches and Favorites are handled. (P. 110)

4. CONTROL

This allows you to set parameters for the controllers, such as the Expression Pedal and Foot Switch. (P. 122)

MENU B

1. CUST. TW

This allows you to customize the Tone Wheel setttings. (P. 96)

2. CONTACT

This allows you to customize the performance of the Virtual Multi-Contacts.(P. 103)

3. PERCUSS

This allows you to customize the Percussion parameters. (P. 58)

4. PED. REG

This allows you to customize the Drawbar registrations for the Pedal Drawbars. (P. 54)

MENU C

1. AMP/EFF

This allows you to adjust the characteristics of the pre-amplifier, Overdrive and Multi-Effects. (P. 83)

2. VIB & CHO

This allows you to adjust the characteristics of the Vibrato & Chorus. (P. 71)

3. LESLIE

This allows you to adjust the characteristics of the inbuilt Leslie effect and external Leslie speaker settings. (P. 72)

MENU D

1. EQUALIZ

This allows you to adjust the Patch Equalizer and Master Equalizer. (P. 81)

2. REVERB

This allows you to adjust the Reverb parameters. (P. 92)

3. ZONES

This allows you to control the Internal and External MIDI Zones. (P. 137)

4. MIDI

This allows you to control the MIDI parameters. (P. 135)

MENU E

1. SAVE

This allows you to save a Setup to a USB Flash Drive or Internal Memory. (P. 148)

2. LOAD

This allows you to load a Setup from a USB Flash Drive or Internal Memory. (P. 150)

3. DELETE

This allows you to delete a Setup file (P. 152)

4. FORMAT

This allows you to format or initialize a USB Flash Drive. (P. 145)

MENU F

1. DEFAULT

This allows you to reset the instrument to various factory default settings. (P. 127)

2. SYSTEM

This allows you to customize the System Parameters and display the System information. (P. 128)

3. UPDATE

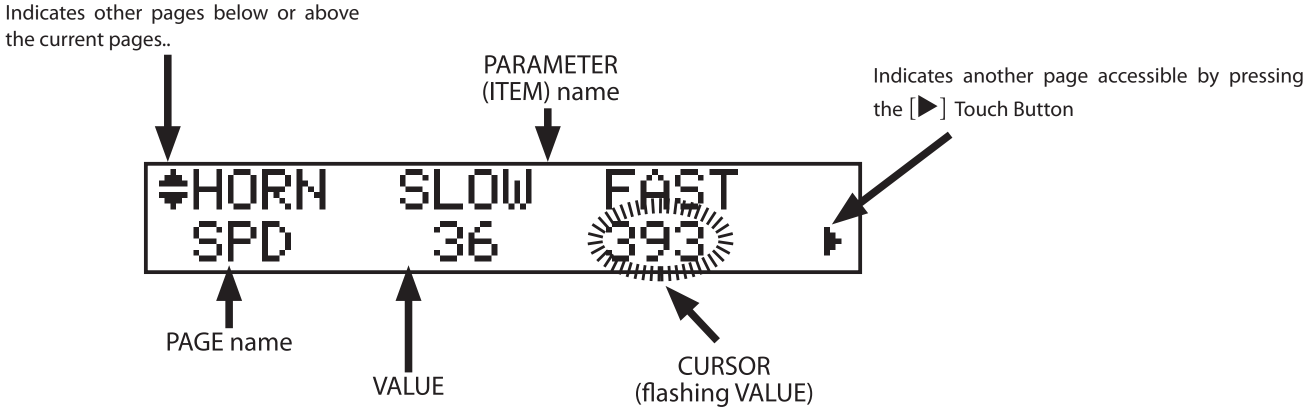
This allows you to update the system software. (P. 154)

FUNCTION MODE

Each Menu selection has a FUNCTION Mode which allows you to control the individual parameters for each selection. The general procedure is the same for all Menu selections.

Read the sections below to see how to navigate through FUNCTION Mode.

HOW TO READ THE DISPLAY



♦HORN SLOW FAST
SPD 36 393

Indicates other pages below or above the current pages..

PARAMETER (ITEM) name

Indicates another page accessible by pressing the [▶] Touch Button

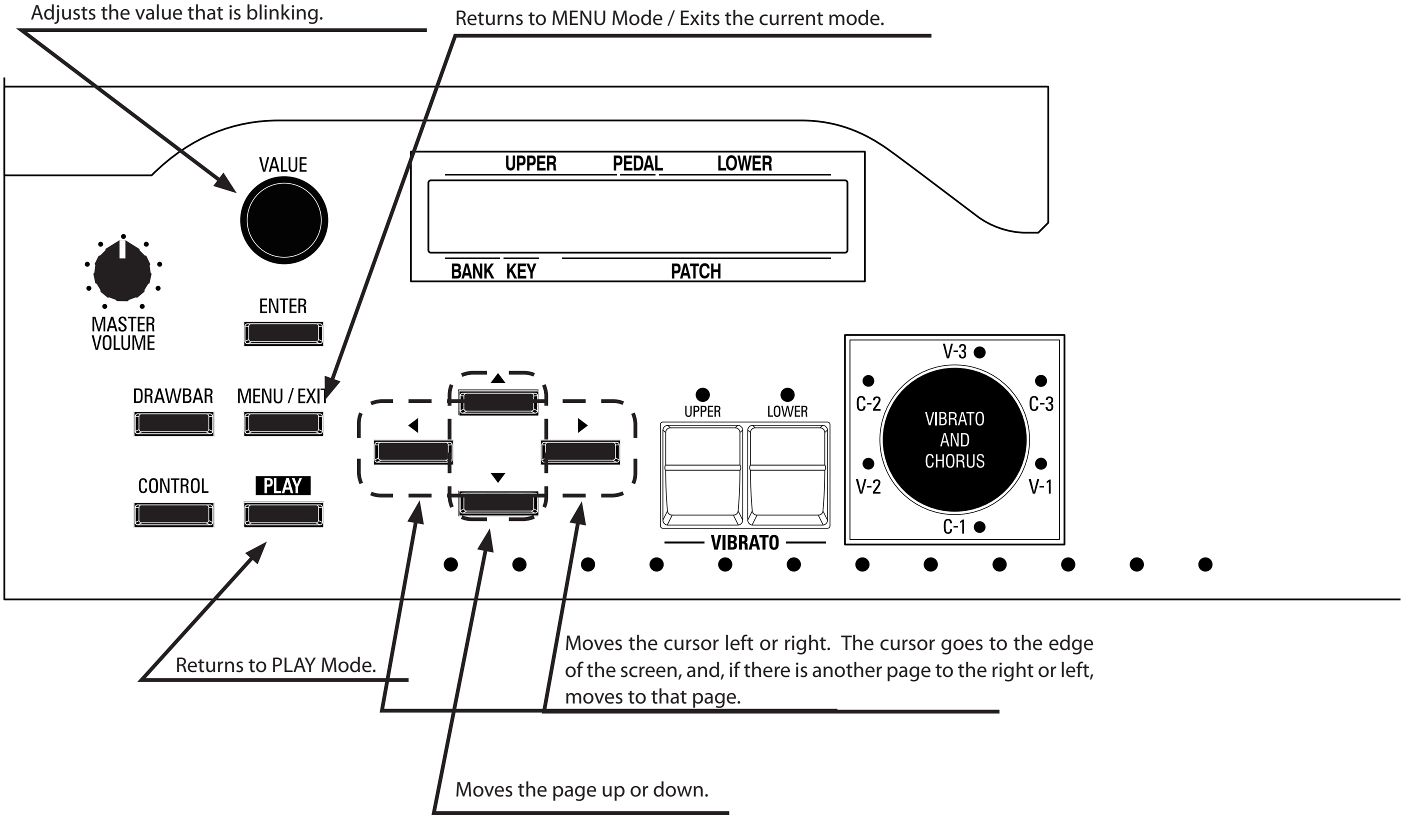
PAGE name

VALUE

CURSOR (flashing VALUE)

In this example, the flashing value indicates the value of the Leslie FAST speed setting for the Horn rotor.

OPERATION IN THESE MODES



VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-3
V-1
C-1
V-2
C-2
VIBRATO AND CHORUS

Adjusts the value that is blinking.

Returns to MENU Mode / Exits the current mode.

Returns to PLAY Mode.

Moves the cursor left or right. The cursor goes to the edge of the screen, and, if there is another page to the right or left, moves to that page.

Moves the page up or down.

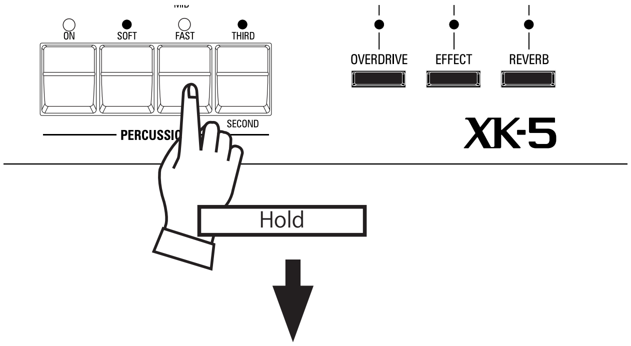
SHORTCUTS

To make programming quicker and easier, each button or tab on the control panel can be used to access the FUNCTION Mode Menu page associated with that button instantaneously.

Pressing and holding any of the buttons on the top panel automatically “shortcuts” the display to the related FUNCTION Mode item.

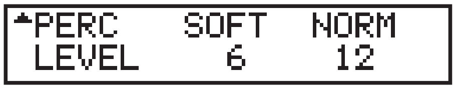
SHORTCUT EXAMPLE:

LOCATE THE PERCUSSION FUNCTION Mode


ON
SOFT
FAST
THIRD
OVERDRIVE
EFFECT
REVERB
PERCUSSI
SECOND
XK-5
Hold

If you wish to edit the Percussion settings, Press and Hold any of the four Percussion Touch Tabs ([ON], [THIRD], [FAST], or [SOFT]) and the display will immediately show the Percussion FUNCTION Mode.

NOTE: You can change the Display Shortcut time. See page 125 for instructions on how to do this.



```
▲PERC    SOFT  NORM
 LEVEL     6    12
```

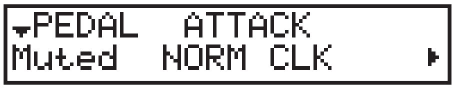
IF YOU FREQUENTLY USE A CERTAIN PAGE...

You can assign a frequently-used FUNCTION Mode page to the [CONTROL] Touch Button for immediate access, even if that particular FUNCTION Mode is not normally accessible via a Shortcut.

EXAMPLE OF OPERATION:

REGISTER THE “DRAWBAR - PEDAL” PAGE

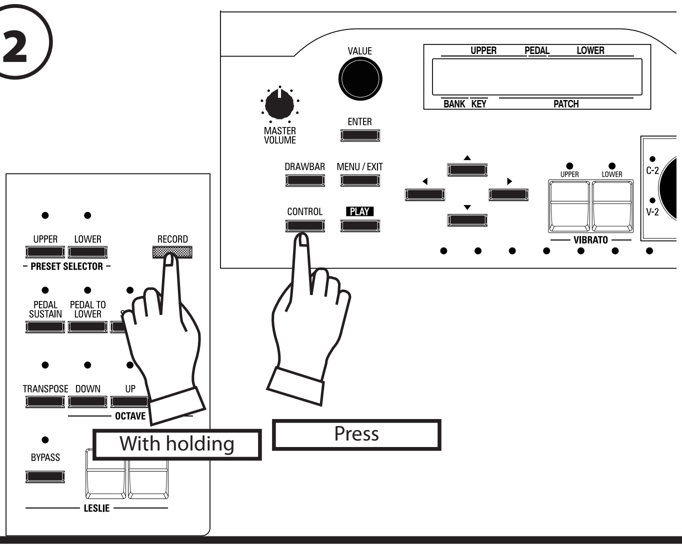
①



```
▼PEDAL  ATTACK
Muted  NORM CLK    ▶
```

Display the page you want to “shortcut” to. For example, suppose you want to access the PEDAL MODE page. To do this, do the following:

②


VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
C-2
V-2
VIBRATO
UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
LESLIE
With holding
Press

1. Press and Hold the red [RECORD] Touch Button.

2. While holding the [RECORD] Touch Button, press the [CONTROL] Touch Button. The display will show,

“Recording Assign”

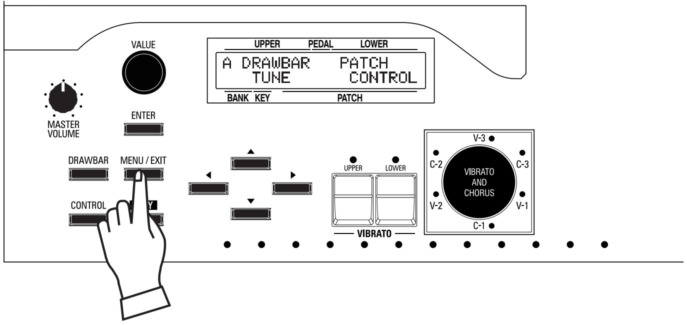
for about 2 seconds.

You will be able to access the desired page immediately by pressing the [CONTROL] Touch Button.

HOW TO CHANGE PARAMETERS

EXAMPLE: ADJUST THE [FAST] PERCUSSION DECAY TIME

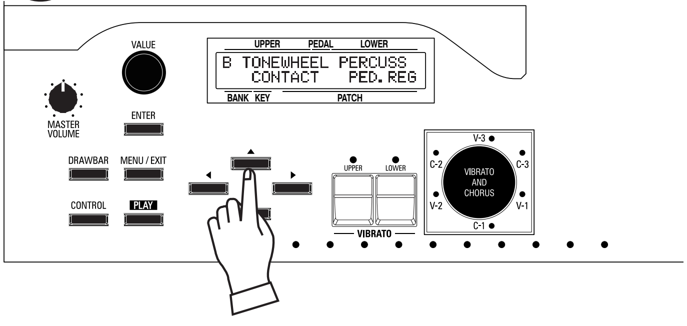
1 LOCATE THE MENU Mode


A DRAWBAR PATCH
TUNE CONTROL
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS

Press the [MENU/EXIT] Touch Button.

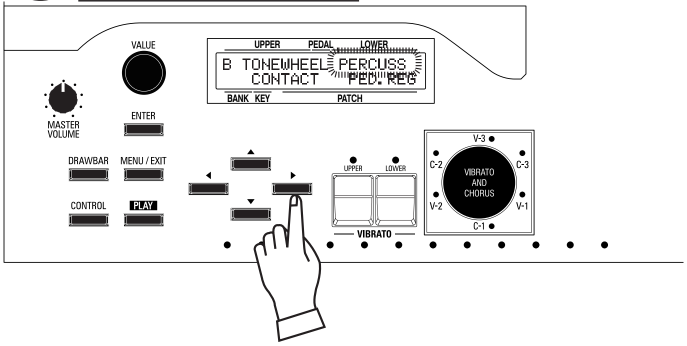
The MENU Mode is displayed.

2 SELECT THE MENU PAGE


B TONEWHEEL PERCUSS
CONTACT PED.REG

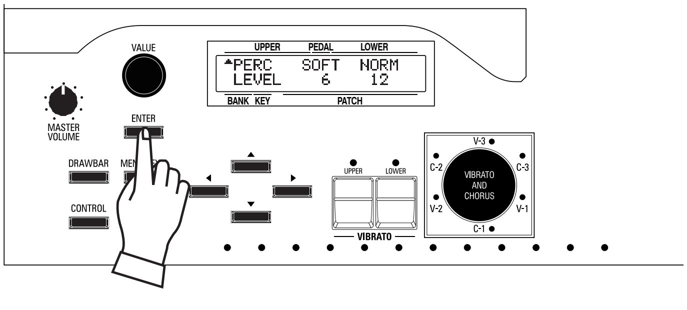
Press the [▲] Touch Button once. Menu B will appear.

3 MOVE THE CURSOR TO THE FUNCTION MODE YOU WISH TO LOCATE


B TONEWHEEL PERCUSS
CONTACT PED.REG

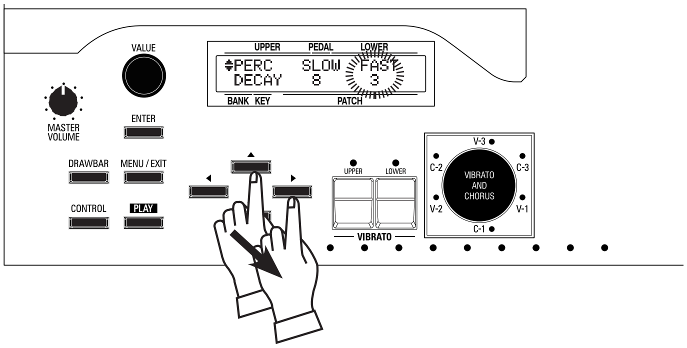
Press the [▶] Touch Button twice. The word "PERCUSS" will blink.

4 ENTER PERCUSSION FUNCTION MODE


PERC SOFT NORM
LEVEL 6 12

Press the [ENTER] Touch Button to enter Percussion FUNCTION Mode will display.

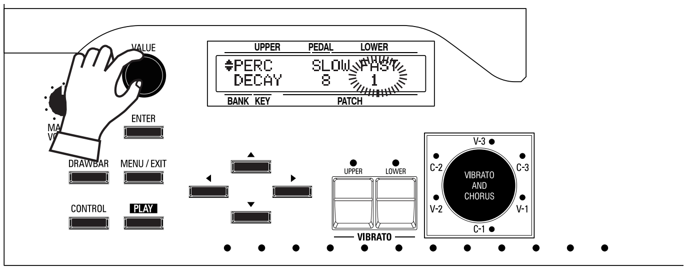
5 MOVE THE CURSOR TO THE PARAMETER YOU WANT TO CHANGE


PERC SLOW FAST
DECAY 8 3

Decay time is on the DECAY page. Press the [▲] Touch Button once.

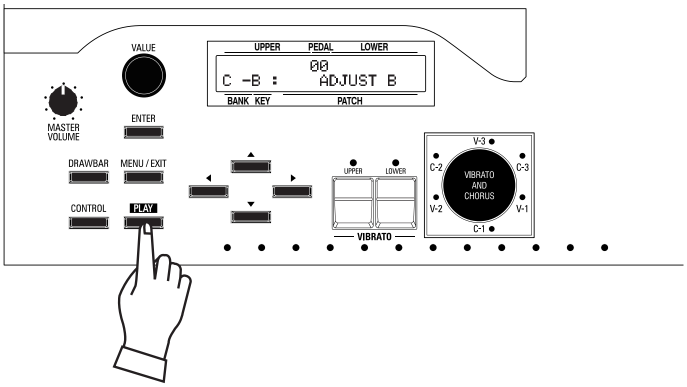
You will see FAST on the right side of the page. Press the [▶] Touch Button once and the word "FAST" will blink.

6 CHANGE THE VALUE


PERC SLOW FAST
DECAY 8 1

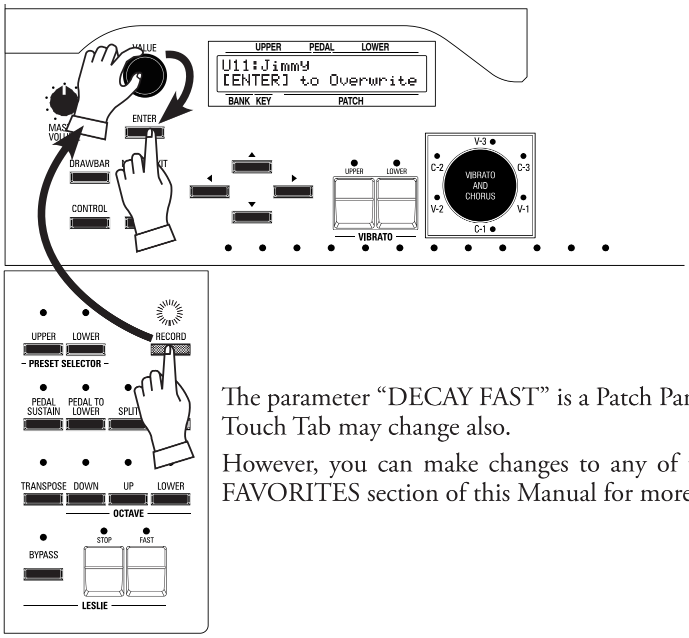
Turn the [VALUE] Rotary Control to the right to lengthen the Decay, and to the left to shorten the Decay.

7 RETURN TO PLAY MODE


VALUE
UPPER PEDAL LOWER
00
C -B : ADJUST B
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [PLAY] Touch Button to return to the PLAY Mode.

8 RECORD TO THE PATCH IF DESIRED


UPPER PEDAL LOWER
U11:Jimmy
[ENTER] to Overwrite
BANK KEY PATCH
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
TRANSPOSE
DOWN
UP
LOWER
OCTAVE
BYPASS
STOP
FAST
LESLIE

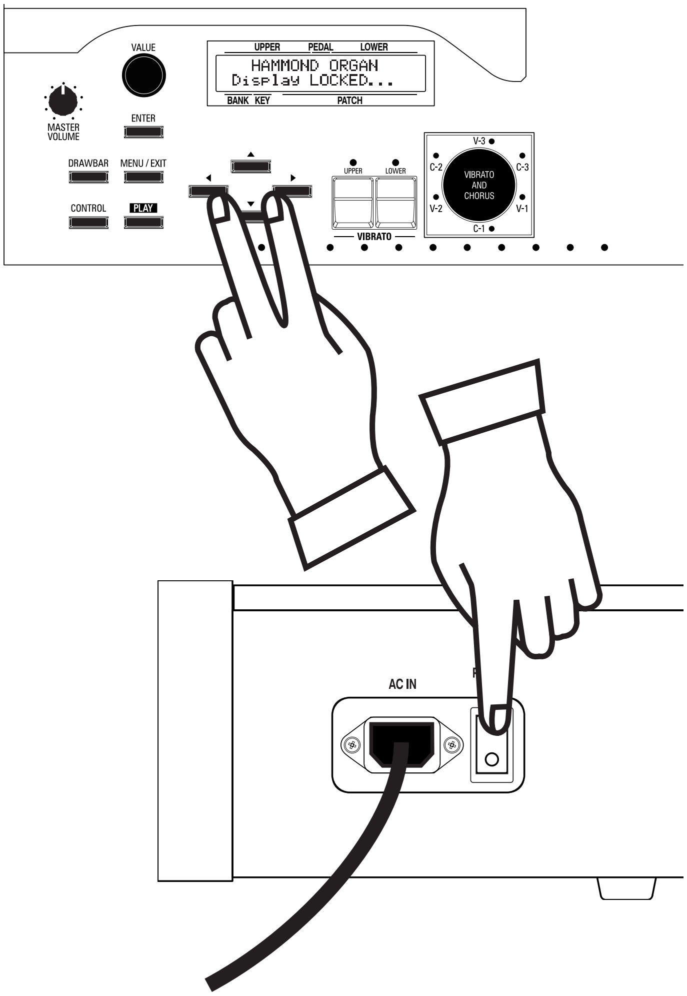
The parameter “DECAY FAST” is a Patch Parameter. If you select a different Patch, the setting for the [DECAY FAST] Touch Tab may change also.

However, you can make changes to any of the User Patches and record your changes. Page see the PATCHES & FAVORITES section of this Manual for more information about Patches.

NOTE: A “Patch Parameter” is a parameter which is unique to each Patch and can have a different value or setting for each Patch. The settings of many of the front panel controls such as Rotary Knobs, buttons, etc. can be saved as Patch Parameters. A parameter which is common to all Patches is called a Global Parameter. For a complete listing of all Patch and Global Parameters, please consult the APPENDIX at the back of this Guide.

DISPLAY LOCK MODE

You can lock the display to avoid accidentally changing something in the midst of playing. To do this, follow the instructions below.


VALUE
UPPER
PEDAL
LOWER
HAMMOND ORGAN
Display LOCKED...
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
AC IN

To lock the display,

1. Press and Hold the [◀] and [▶] Touch Buttons.
2. While holding the [◀] and [▶] Touch Buttons, turn the power to the instrument "ON."
3. Continue to hold the[◀] and [▶] Touch Buttons until the display shows:

Display LOCKED

When the display is locked:

- The [MENU/EXIT] Touch Button (P. 38) is disabled.
- The [RECORD] Touch Button is disabled for recording FUNCTION Mode changes.
- "Short-Cut" function (P. 41) is disabled.
- [PRESET SELECTOR] Touch Buttons (P. 112) are still enabled.

To unlock the display, repeat steps 1 through 3 above. The display will show:

Display UNLOCKED

NOTE: The [RECORD] Touch Button can still be used in Display Lock mode to save Patches and Preset Keys. If you wish to do this, be sure to turn the FAVORITE parameter in the PATCH Edit Menu "OFF." Please consult the PATCHES & FAVORITES section starting on page 107 for more information on saving Patches and Favorites.

NOTE: Restoring the default settings, either by DEFAULT ALL or by applying power while holding the [RECORD] Touch Button, does not unlock the display. To unlock the display, follow the steps described above.

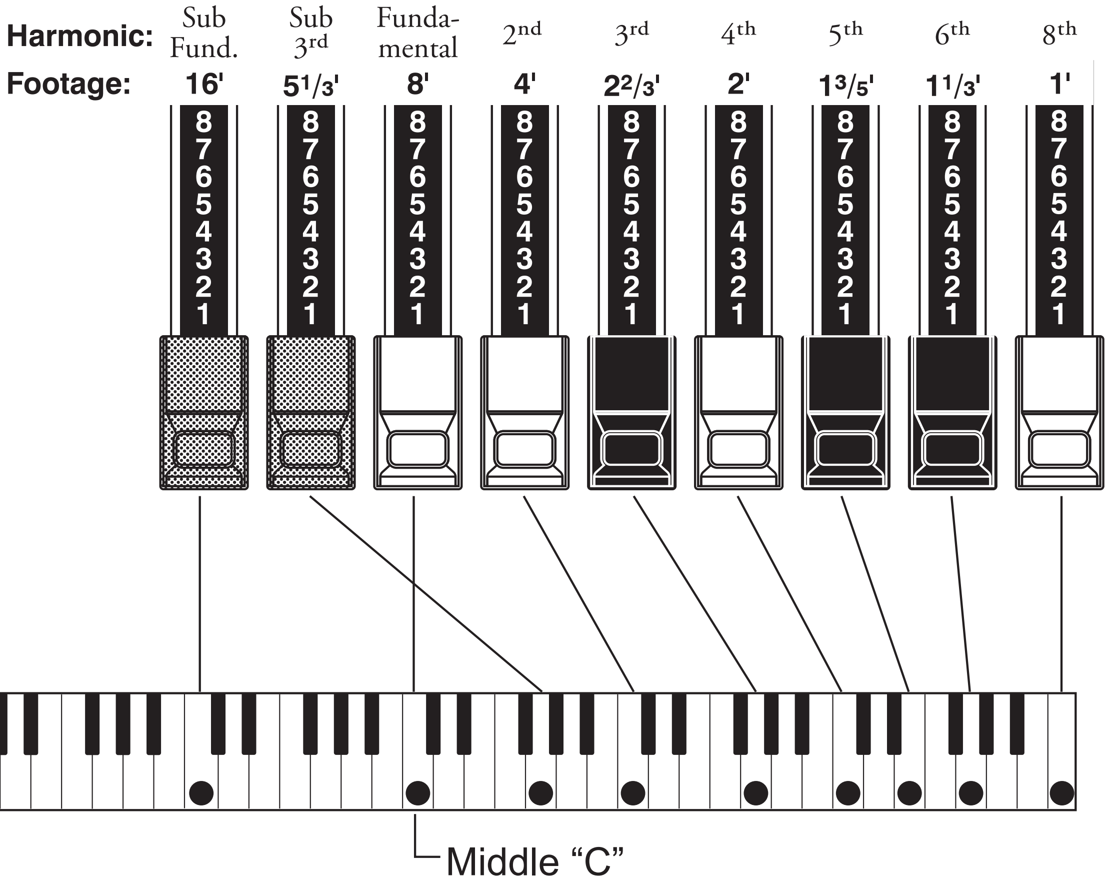
NOTE: You can still use the [CONTROL] Touch Button to access a frequently-used FUNCTION Mode page in Display Lock mode. However, you cannot move the cursor if the page has two or more parameters.

DRAWBARS
&
PERCUSSION

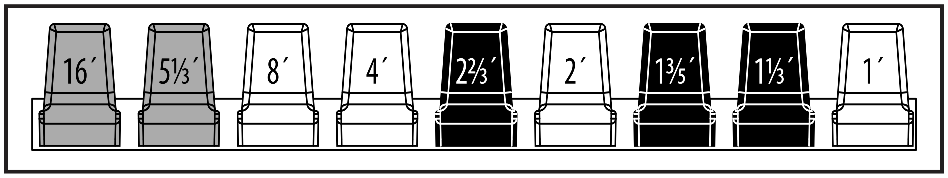
HARMONIC DRAWBARS™

The XK-5 has 4 sets of nine Drawbars, two for each manual. The Harmonic Drawbars are the heart of the renowned Hammond Sound and have been used since the first Hammond Organ Model A was introduced in 1935.

There are approximately 253,000,000 possible sound combinations that can be produced by these Drawbars. The illustration below shows how each Drawbar relates to the manual when middle "C" is pressed.



Each Drawbar may be set in eight different positions in addition to the silent or "0" position. Each position, as marked on the Drawbars, represents a different degree of intensity of the harmonic it controls. When drawn out to position 1. the harmonic it represents will be present with minimum intensity, when drawn out to position 2 with greater intensity, and so on up to position 8.



Each Drawbar on the XK-5 is marked with a number followed by a footage mark. This follows the tradition of Hammond Organs made starting from the late 60's. For example, the first white Drawbar is marked "8'." This is pipe organ terminology indicating the length of a pipe necessary to produce the lowest note on the manual. If the 8' Drawbar is pulled out and the playing key "C1" is pressed, the note produced would require a pipe eight feet long. The diagram above shows the footage designations for each Drawbar.

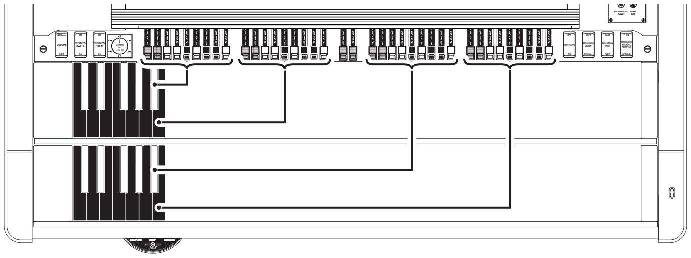
DRAWBARS FOR UPPER AND LOWER MANUALS

◆ PRESET KEYS AND DRAWBARS

At the left end of each manual are twelve keys identical to the playing keys except reversed m color. These are the Preset Keys.

Each Preset Key, with the exception of the “A#” and “B” Adjust Keys at the extreme right of the group, makes available a different tone color which is drawn from the inbuilt Patch Library. The Preset Keys can also be used to store your own settings.

NOTE: When recalling a patch, the positions of the Drawbars will change internally, but not physically. When a Drawbar is moved, the Patch setting will update to that Drawbar’s current position (P. 124).



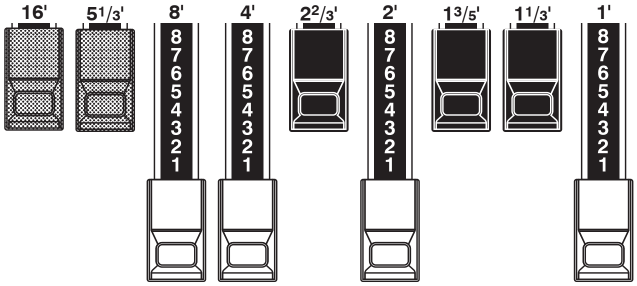
There are five sets of Drawbars at your disposal, two sets for each Manual and one set for the Pedals. The Upper Drawbars are on the Left side of the Control Panel, immediately above the Upper Manual. There are 2 sets of 9 Drawbars each, corresponding to the the “A#” and “B” Adjust Keys of the Upper Manual. The 2 Pedal Drawbars are in the center. To the right are the Lower Drawbars, again, 2 sets of 9 Drawbars each, corresponding to the the “A#” and “B” Adjust Keys of the Lower Manual.

When either the “A#” or “B” Adjust Key is engaged (red LED lit), the instrument will sound with whatever registration is set up on the Drawbars associated with that key (see the diagram above).

NOTE: The Percussion effect is introduced when the Upper Manual “B” Adjust Preset is engaged.

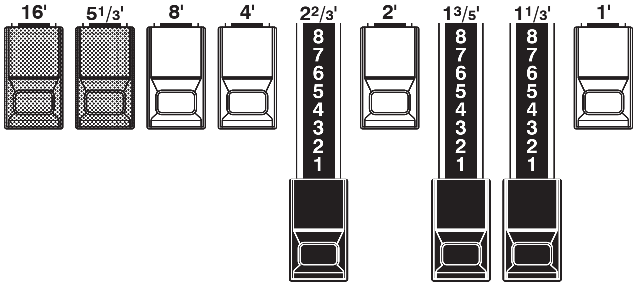
NOTE: Normally the Drawbars will only change the tone when either the “A#” or “B” Adjust Presets are selected. However, you can set the Drawbars so that the “A#” Drawbar set will change the Drawbar registration of any selected Preset. See page 124 for instructions on how to do this.

WHITE DRAWBARS



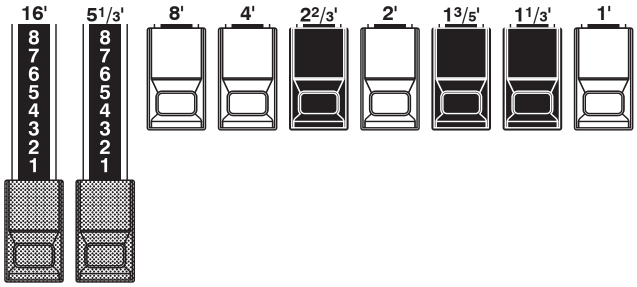
The first white Drawbar represents the “fundamental” or “8’ base” tone. All of the other white Drawbars are octave intervals or harmonics of the fundamental tone. The tonal brilliance is greatly increased by adding white Drawbars, but the harmonics added are always in “consonance” or harmony.

BLACK DRAWBARS



The black Drawbars represent the “dissonant” 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.

BROWN DRAWBARS



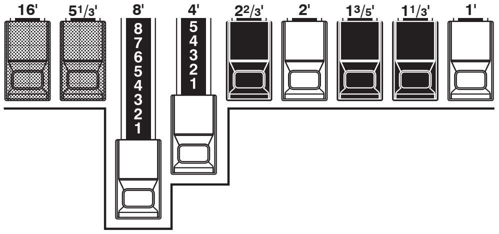
The two brown Drawbars on the far left give depth and richness to the sound. The left 16′ is one octave lower than the 8′, and 5⅓′ is the third harmonic of the 16′ fundamental. Normally, the tones are built on the 8’ fundamental, but, if you want to add depth to the tone or to expand the playing range by one octave lower, build your tones on the 16′ fundamental.

NOTE: The Colors of the Drawbars are traditional to Hammond, and were established to provide a quick visual guide to the harmonics generated by the Drawbars.

DRAWBAR REGISTRATION PATTERNS

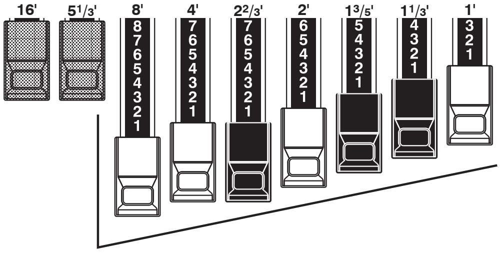
Regardless of the size of a pipe organ or its number of stops, all of its voices are related to four basic families of tone. The four basic families - Flute, Reed, String and Diapason - can be quickly set up on the Drawbars by relating a pattern or shape to each family.

Flute family (2 step pattern)



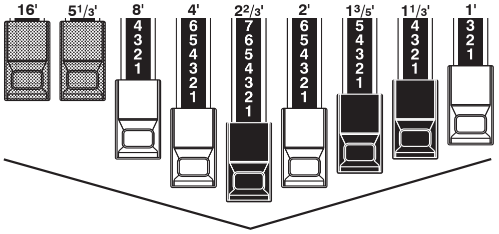
Accompaniment Flute 8´ I	00 8460 000
Accompaniment Flute 8´ II	00 3220 000
Accompaniment Flute 8´ III	00 8600 000
Chorus of Flutes 16´	80 8605 002
Orchestral Flute 8´	00 3831 000
Piccolo 2´	00 0006 003
Stopped Flute 8´	00 5020 000
Tibia 8´	00 7030 000
Tibia 4´	00 0700 030
Tibia (Theater) 16´	80 8605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

Diapason family (check mark pattern)



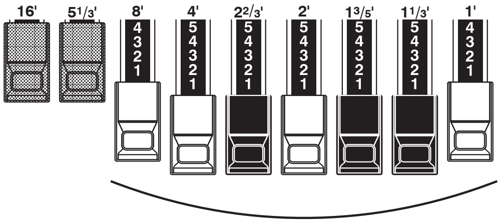
Accomp. Diapason 8´	00 8874 210
Chorus Diapason 8´	00 8686 310
Diapason 8´	00 7785 321
Echo Diapason 8´	00 4434 210
Harmonic Diapason 16´	85 8524 100
Harmonic Diapason 8´	00 8877 760
Harmonic Diapason 4´	00 0606 045
Horn Diapason 8´	00 8887 480
Open Diapason 8´	01 8866 430
Solo Diapason	01 8855 331
Wood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

Reed family (triangle pattern)



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

String family (bow pattern)



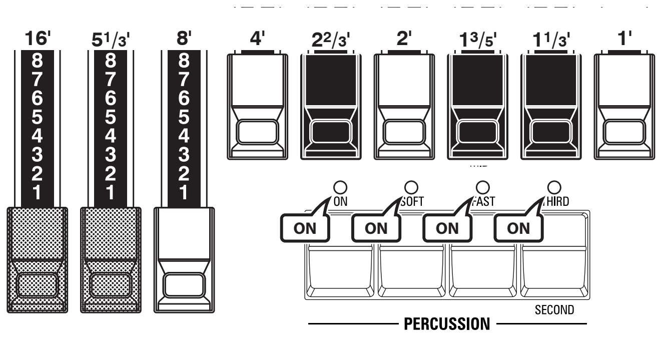
Cello 8´	00 3564 534
Dulciana 8´	00 7770 000
Gamba 8´ I	00 3484 443
Gemshorn 8´	00 4741 321
Orchestral String 8´	00 1464 321
Salicional 8´	00 2453 321
Solo Viola 8´	00 2474 341
Solo Violin 8´	00 3654 324
Viola da Gamba 8´	00 2465 432
Violina 4´	00 0103 064
Violone 16´	26 3431 000

Notice that Drawbar registrations are expressed in number groups of 2, 4 and 3. This “2-4-3” number formula for Drawbar Registration has been a Hammond convention since the beginning. It has been found to be the easiest way to convey a specific setting. The first two numbers correspond to the two brown Drawbars of either manual. The middle four numbers designate the 8’, 4’, 2 2/3’, 2’ Drawbars, and the remaining three numbers refer to the last three Drawbars.

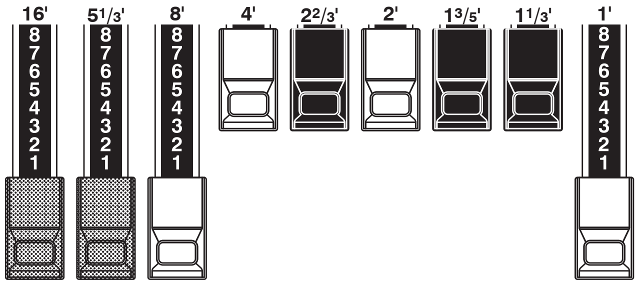
MODERN DRAWBAR REGISTRATIONS

The Drawbar registration patterns shown on the previous page are intended to simulate the four basic families of tone found on a classical pipe organ, since this was the original intention of the Hammond Organ. Later on, as the Hammond Organ spread throughout Jazz, Pop, Rock and (especially) Gospel music, Some timeless registrations become common.

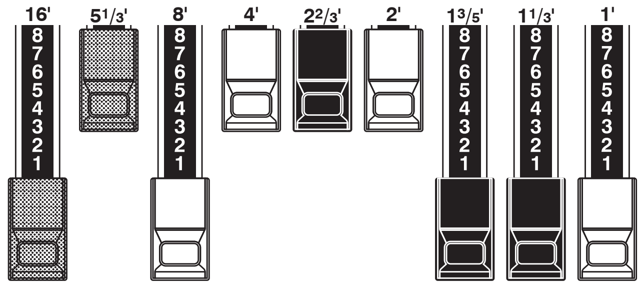
Jazz


16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'
ON
SOFT
FAST
HIRD
ON
ON
ON
ON
SECOND
PERCUSSION

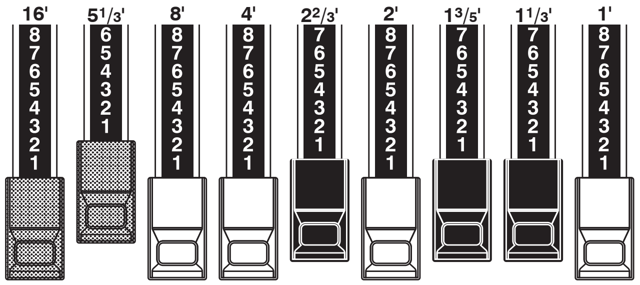
Bluesy


16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'

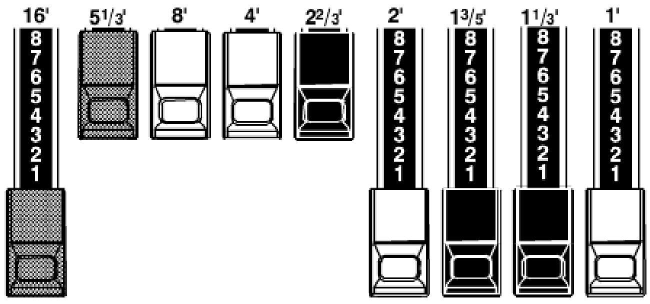
Groovy & Funky


16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'

Max Power


16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'

“Squabble” (“Erroll Garner” registration)


16'
5 1/3'
8'
4'
2 2/3'
2'
1 3/5'
1 1/3'
1'

MATCH THE REGISTRATION TO THE DRAWBAR SETTING

When you recall a Patch, the Drawbar registration stored in the Patch will be heard, regardless of the actual Drawbar settings.

If you move any Drawbar, its position will automatically change to its physical position, The rest of the Drawbars will remain at their Patch settings if you do not move them.

However, if you select a Patch with a particular Drawbar setting and you wish to change the Drawbar registration instantly to the current physicakl Drawbar registration, you can do so by using the PRESET SELECTOR Touch Buttons.

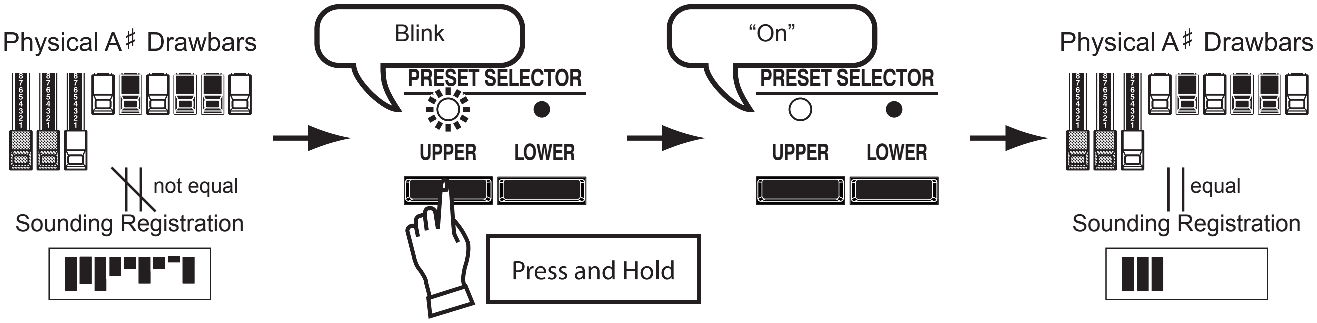
For example, suppose you have selected the Upper “A#” Adjust Preset Key, with a physical Drawbar setting of 88 8000 000. Suppose you then select a Patch with a Drawbar setting of 86 8426 216.

If you wish instantly to switch to the “A#” Drawbar setting, do the following

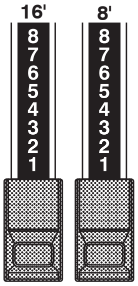
1. Press and Hold the [UPPER] PRESET SELECTOR Touch Button until the LED blinks.
2. When the LED blinks, release the [UPPER] Touch Button. The instrument will now sound with the physical Drawbar registration. All other Patch settings will be retained.

Use the [UPPER] Touch Button for the Upper “A#” Drawbars and the [LOWER] Touch Button for Lower “A#" and Pedal Drawbars.

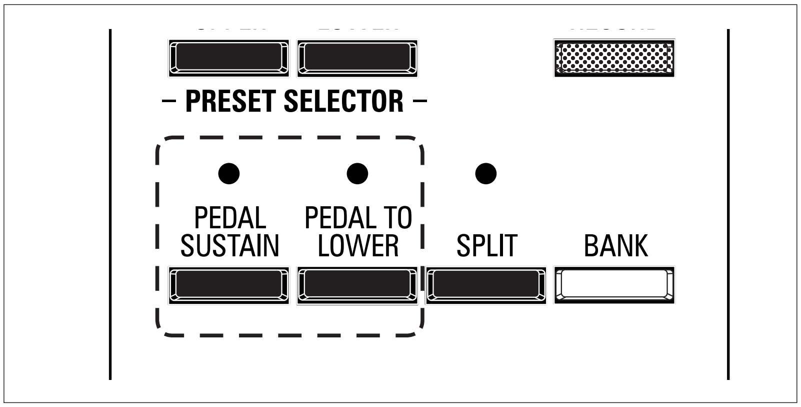
NOTE: The Drawbar Control Mode must be set to “ALWAYS A#” in order for this feature to work. See page 118 for more information about Drawbar Control Mode.


Physical A♯ Drawbars
not equal
Sounding Registration
Blink
PRESET SELECTOR
UPPER
LOWER
Press and Hold
“On”
PRESET SELECTOR
UPPER
LOWER
Physical A♯ Drawbars
equal
Sounding Registration

PEDAL DRAWBARS


16'
8'
8
7
6
5
4
3
2
1

The two brown Drawbars located between the Drawbars for the Upper and Lower Manuals control the sounds produced by the Pedal division. The first Pedal Drawbar produces a composite tone at 16’ pitch for a deep foundation bass, while the second Pedal Drawbar produces a composite tone at 8’ pitch, or one octave higher. The registration of the Pedals appears in the center of the display - 16´ on the left and 8´ on the right.



PEDAL SUSTAIN

When the [PEDAL SUSTAIN] Touch Button is “ON,” the Pedal tones will smoothly decay upon release, much in the manner of a string bass. This is a popular option for playing the Pedal tones.

[PEDAL SUSTAIN] Touch Button

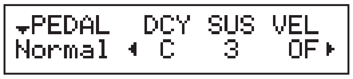
Turns PEDAL SUSTAIN “ON”(LED lit) and “OFF.”

After releasing your foot from a Pedal note (or, if you release your finger from the Manual key when you are using PEDAL TO LOWER, the sound will slowly fade, or decay.

◆ SETTING THE AMOUNT OF PEDAL SUSTAIN

The default setting is “2” which is a short Sustain. If you want to change the Sustain length, do the following:

1. Press and Hold the [PEDAL SUSTAIN] Touch Button. The display will show the following:



```
▾PEDAL  DCY SUS VEL
Normal ◂ C   3   OF▸
```

2. Press the [▶] Touch Button once. The number underneath “SUS” should now blink.

3. Turn the [VALUE] Rotary Knob to change the Sustain length. The range is from “1” to “5.” The higher the number, the longer the Sustain length.

PEDAL TO LOWER

When the [PEDAL TO LOWER] Touch Button is “ON,” the tones produced by the Pedals will sound from the Lower Manual starting with the lowest “C” (1C).

PEDAL TO LOWER] Touch Button

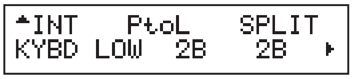
Turns the Pedal To Lower function “ON”(LED lit) and “OFF” (LED not lit)

The Pedal tones will play either from the lower range of the Manual if the XK-5 is used by itself, or the Lower Manual if the XK-5 has been expanded. The default range of the Pedal To Lower is from “1C” (the lowest note on the manual) to “2B” (the second “B” key).

◆ SETTING THE NOTE RANGE OF THE PEDAL TO LOWER

To change the PEDAL TO LOWER Note Range, do the following:

1. Press and Hold the [PEDAL SUSTAIN] Touch Button. The display will show the following:



```
▴INT   PtoL   SPLIT
KYBD LOW  2B   2B  ▸
```

2. Press the [▶] Touch Button once. The number and letter underneath “PtoL” should now blink.

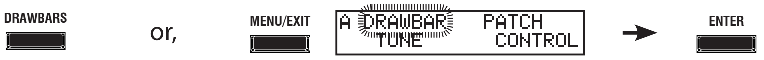
3. Turn the [VALUE] Rotary Knob to change the Note Range. You can select from “1C” (the lowest note on the manual) to “6C” (the highest note on the manual).

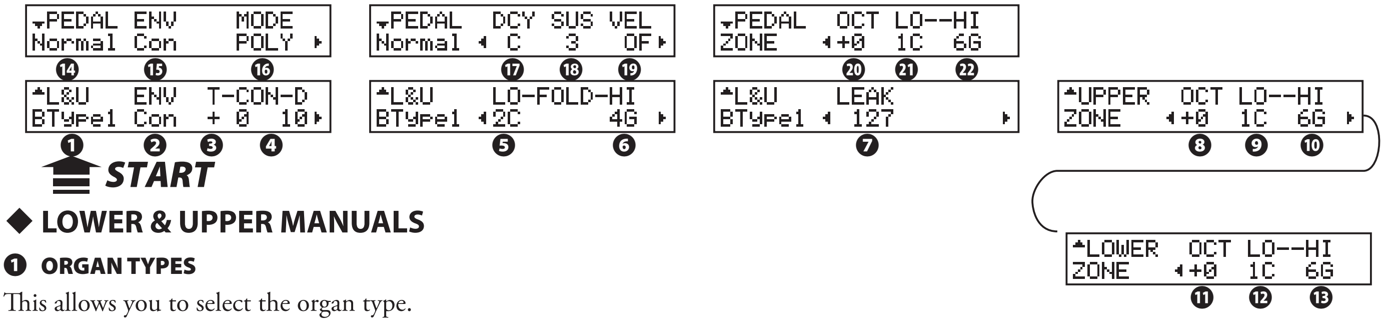
The value shown will be the upper note limit for the Pedal tones.

DRAWBAR Edit Menu

This Menu Page allows you to modify the characteristics of the Drawbars.

To locate this Menu, follow the steps below:





◆ LOWER & UPPER MANUALS

❶ ORGAN TYPES

This allows you to select the organ type.

A-100:	A-102 No. 35564
B-3:	B-3 No. A27563
C-3:	C-3 No. C155596
Mellow:	Pure sine waves with no harmonic development
Vx	Reproduces the sound of a vintage British combo organ
Farf	Reproduces the sound of a vintage Italian combo organ
Pipe	Produces authentic pipe organ tones.

❷ ENVELOPE

This allows you to set the rate of Attack (when the key is touched) and Release (when the key is released).

The setting range is Con (contact), R1 -- R15, AR1 -- AR15.

"Con" is the envelope of the key-click(s) generated with the Virtual Multi-Contacts.

"1 -- 15" is the rate of Attack without the Virtual Multi-Contacts. The greater the value, the slower the Attack (the speed at the which the Drawbar registration sounds when a key ids depressed).

The "R" parameter changes the Release rate. The Attack rate is that provided by the Virtual Multi-Contacts. This means that the onset of the tone will be instantaneous while the Release rate is regulated by the numerical setting.

The "AR" parameter disables the Virtual Multi-Contacts and allows you to change both the Attack and Release rate. At higher numerical settings the Attack and Release will be slow, similar to that of a pipe organ.

❸ CONTACT TIME OFFSET

This allows you to control the time of the Virtual Multi-Contacts to make full contact.

The setting range is -63 -- 0 -- +63. The higher the value, the longer the Attack and the shorter the Release.

❹ CONTACT DAMPING

This allows you to control the damping rate of the Virtual Multi-Contacts.

The setting range is 0 -- 31. The higher the value, the more pronounced the Key Click.

❺ FOLD BACK - LOW

This allows you to set the key-point from which the 16´ Drawbar folds back (repeats the same pitches on the lower octave of the keyboard).

The bottom key on the keyboard is displayed as "1C." The setting range is "1C" to "2C."

❻ FOLD BACK - HIGH

This allows you to set the key-point at which the Drawbar pitches fold back (repeat the same notes on higher octaves). The setting range is 4G to 5C.

NOTE: The Fold-back effect will be heard starting with the 2⅔´ Drawbar (first black Drawbar) and all the other Drawbars which introduces high harmonics.

❼ LEAK LEVEL OFFSET

This allows you to set the total volume of the leakage tone.

The setting range is 0 (silent) to 127 (maximum).

tips TONE WHEEL SET

There are variations available for each virtual Tone Wheel set - A-100, B-3, C-3 and Mellow. See page 173 for details.

tips DRAWBAR VOICING TYPE

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 60 of this Guide.

tips "KEY CLICK" or "KEY POP"

On tone-wheel organs such as the B-3/C-3, each time a key was depressed a key-pop or click was produced. This Advanced Feature allows you to change the personality of the Key Click.

tips KEY-CLICK SETTINGS

Simulation of classic multi-contact keyboard B-3/C-3: ENV=CON
Simulation of a PCM synthesizer to produce the key-click only at 'attack': ENV=R1
Slow envelope like a pipe-organ: ENV=AR15

tips DRAWBAR FOLDBACK

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 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 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.

❽ UPPER ZONE OCTAVE

This allows you to select the octave in which the Drawbars will sound for the Upper Manual.

You can select “-2” (up to two octaves down) through +2” (up to two octaves up).

❾ UPPER ZONE LOW

❿ UPPER ZONE HIGH

These two parameters allow you to set the Low and High note ranges for the Upper Manual Drawbar tones.

You can select from “1C” through “6C” (the lowest and highest playing keys).

⓫ LOWER ZONE - OCTAVE

This allows you to select the octave in which the Drawbars will sound for the Lower Manual.

You can select “-2” (up to two octaves down) through +2” (up to two octaves up).

⓬ LOWER ZONE - LOW

⓭ LOWER ZONE - HIGH

This allows you to allows you to set the Low and High note ranges for the Lower Manual Drawbar tones.

You can select from “1C” through “6C” (the lowest and highest playing keys).

NOTE: See page 137 for more details about Upper and Lower Zones.

◆ PEDALS

⓮ ORGAN TYPE

This allows you to set the Organ type for the Pedals.

Normal: Traditional Tone Wheel sound of the B-3/C-3.

⓯ ENVELOPE

This allows you to set the Attack and Release characteristics of the Pedal tones.

NOTE: See ❷ for details.

⓰ KEY MODE

This allows you to set the Pedal polyphony.

POLY: Up to 3 notes will play simultaneously.

MONO: If multiple notes are played, only the lowest note will sound.

⓱ ENVELOPE - DECAY RATE

This allows you to determine whether the Pedal tone remains at the same volume as a note is held, or if the voice decays as a note is held, similar to a plucked string.

The setting range is 1(short) - 5(long) and C(continuous).

⓲ ENVELOPE - SUSTAIN LENGTH

This allows you to set the Release Rate (= the decay time after key release), when the [PEDAL SUSTAIN] Touch Button is ON. You can select from “1” (the shortest), through “5” (the longest decay time).

NOTE: You can also locate this page by pressing and holding the [PEDAL SUSTAIN] Touch Button.

tips SUSTAIN

On an organ, such as the XK-5, the word “SUSTAIN” refers to the amount of time a note continues to sound after a key is released. On a synthesizer this would be called “T4” or “Release.”

⓳ VELOCITY

This allows you to set the velocity response. You can select “OFF” (the volume does not change regardless of finger pressure on the keys), or from “1” through “4” (the sounds gets louder even if the key is played softly.)

⓴ PEDAL ZONE - OCTAVE

This allows you to select the octave in which the Pedal tones will sound.

You can select “-2” (up to two octaves down) through +2” (up to two octaves up).

㉑ PEDAL ZONE - LOW

㉒ PEDAL ZONE - HIGH

These two parameters allow you to set the Low and High note ranges for the Pedal tones. You can select from “1C” through “3C” (the lowest and highest notes).

NOTE: See page 137 for more details about the Pedal Zone.

NOTE: All these are Patch Parameters and can be stored to individual Patches.

tips ZONES

On the XK-5, “ZONES” refer to playing ranges. There are INTERNAL Zones (or “Keyboard Channels”) for the Drawbar, Percussion and Pedal tones of the XK-5, and EXTERNAL Zones for controlling MIDI instruments connected to the XK-5 .

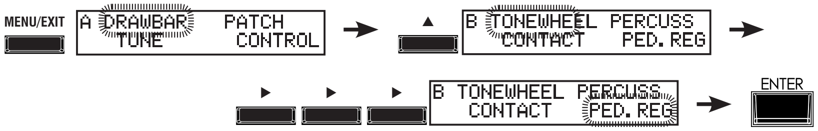
For more details see the MIDI/USB section of this Guide starting on page 129.

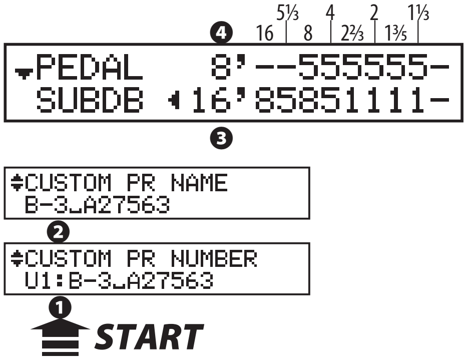
PED. REG (Pedal Registration) Edit Menu

This Edit Menu allows you to select and edit the registrations for the Pedal Drawbars.

Before editing these Parameters, it is a good idea first to select the Custom Pedal Registration you want to modify. You can then save your changes to your own Custom Pedal Registration. The Custom Pedal Registrations which can be overwritten are the User Registrations, which are prefaced by a "U" in the display.

To locate this Menu, follow the steps below:





❶ CUSTOM PR NUMBER (P)

This allows you to select the Custom Pedal Registration Number to use in a Patch. The setting range is "F1" to "F3" (non-rewritable) and "U1" to "U3" (rewritable).

NOTE: The "F" stands for Factory. Factory settings are permanently stored in memory and cannot be changed. Therefore, if you wish to edit or creata a Custom Pedal Registration, use the "U" or User settings, which can be overwritten with your settings.

NOTE: If any of the Pedal Registration parameters are edited, an asterisk ("*") will show in the upper left corner of the display. To save the changes you have made, save them as a Custom Pedal Registration. This is explained on the next page.

NOTE: This parameter is a Patch Parameter and is recorded as part of a Patch.

◆ CUSTOM PEDAL REGISTRATION PARAMETERS

All of the parameters described below and on the next page collectively comprise a Custom Pedal Registration. These parameters cannot be saved as individual Patch Parameters; however a Custom Pedal Registration can be recorded as part of a Patch.

❷ CUSTOM PR NAME (PR)

This allows you to name the Custom Pedal Registration using up to 10 characters.

Use the [◀][▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters.

NOTE: See page 56 for detailed instructions on naming Custom Pedal Registrations.

❸ SUB DRAWBAR - 16´ (PR)

This allows you to adjust the registration for the 16'Pedal Drawbar.

Adjustable footages are 16´, 5⅓´, 8´, 4´, 2⅔´, 2´, 1⅗´, and 1⅓´.

NOTE: The footages 2⅔´, 2´, 1⅗´ and 1⅓´ in the Sub Drawbar 16´ has softer maximum volume than other footages to allow fine volume adjustment.

❹ SUB DRAWBAR - 8´ (PR)

This allows you to adjust the registration for the 8' Pedal Drawbar.

Adjustable footages are 8´, 4´, 2⅔´, 2´, 1⅗´, and 1⅓´.

tips **"WHAT IS A "CUSTOM PEDAL REGISTRATION?"**

On a tone-wheel Hammond Organ, the harmonic resources for Pedal tones are combined into two Drawbars each of which draws a combination of harmonics instead of individual harmonics as with the Manual Drawbars. Over the years, several different schemes were used to voice the Pedal Drawbars. The following pages explain how to set the various harmonics to create **Custom Pedal Registrations**.

The XK-5 has 6 different Custom Pedal Registrations. Three (3) of these are User registrations (indicated by a "U") while the other three (3) are Factory registrations (indicated by an "F"). The Factory registrations are permanently written in memory, but the User registrations can be overwritten with your own settings. You can even rename them if you wish.

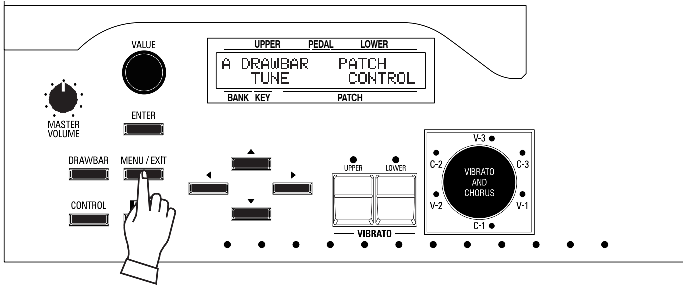
The first two pages of the PED. REG. Edit Menu allow you to select the Custom Pedal Registration you wish to use or modify, as well as name a Custom Pedal Registration you have created. The remaining pages allow you to modify the harmonic content of the selected registration. After you have made all of your changes, you can save them as a Custom Pedal Registration.

Please consult pages 55 and 56 for more information about creating, saving and naming your own Custom Pedal Registrations. Also consult the APPENDIX at the back of this Guide for a list of the preset Custom Pedal Registrations.

CREATING & RECORDING A CUSTOM PEDAL REGISTRATION

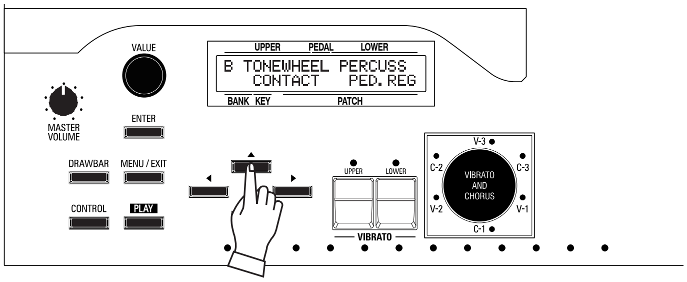
The Pedal Registration parameters can be saved as a Custom Pedal Registration. To record a Custom Pedal Registration, do the following:

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

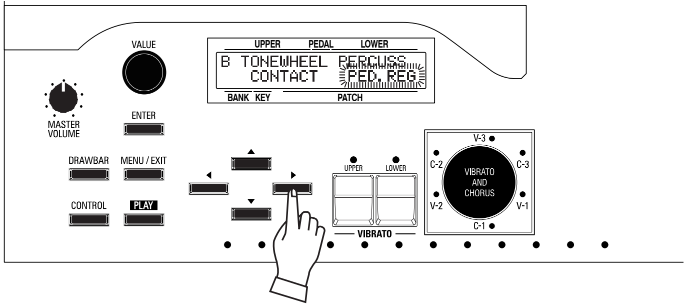
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


VALUE
UPPER PEDAL LOWER
B TONEWHEEL PERCUSS
CONTACT PED.REG
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

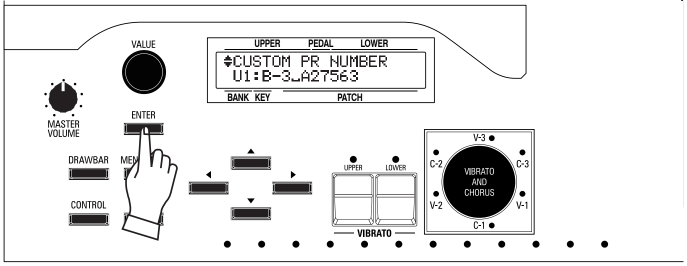
Press the [▲] Touch Button once to display the B Menu.

3 SELECT THE PED.REG EDIT MENU


VALUE
UPPER PEDAL LOWER
B TONEWHEEL PERCUSS
CONTACT PED.REG
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

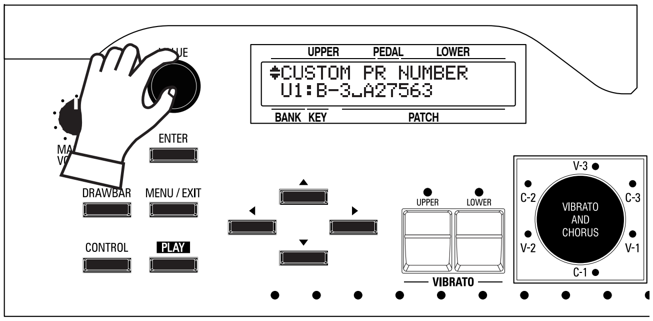
Press the [▶] Touch Button three times. “PED.REG” should blink.

4 GO TO PED.REG FUNCTION MODE


VALUE
UPPER PEDAL LOWER
♦CUSTOM PR NUMBER
U1:B-3_A27563
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

Press [ENTER] to enter PED.REG FUNCTION Mode.

5

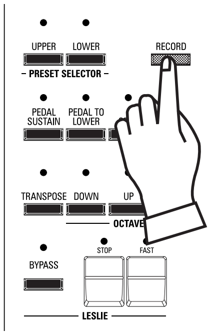

UPPER PEDAL LOWER
♦CUSTOM PR NUMBER
U1:B-3_A27563
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

Use the [VALUE] Rotary Knob to select the Custom Pedal Registration you wish to edit.

6

Make whatever changes you wish to the Custom Pedal Registration you have selected.

7

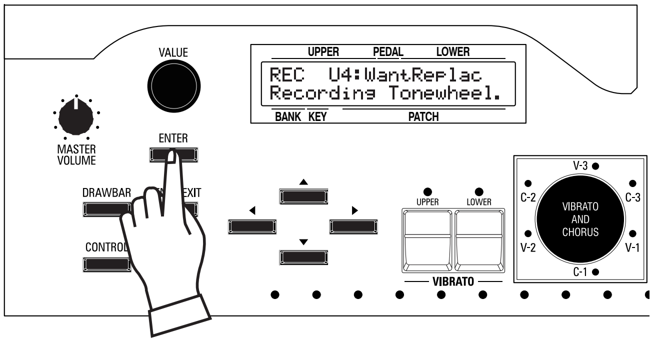

UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished editing your Custom Pedal Registration, press the [RECORD] Touch Button. The display will show:

“`[ENTER] to Overwrite`”

on the bottom line.

8


VALUE
UPPER PEDAL LOWER
REC U4:WantReplac
Recording Tonewheel.
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER LOWER
VIBRATO AND CHORUS
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO

Press [ENTER] to record the Custom Pedal Registration. The display will show, “`Recording Ped.Regist...`” for approximately 1 second.

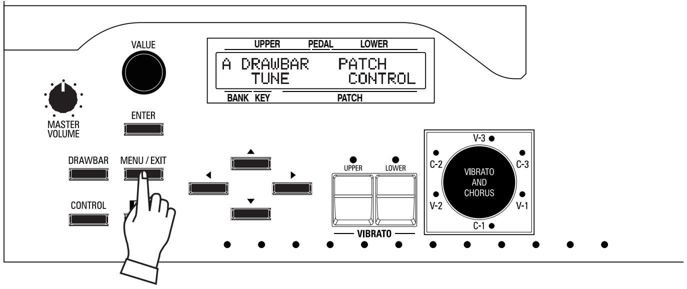
When the message no longer displays, your settings has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Pedal Registration, press the [MENU/EXIT] or [PLAY] Touch Button.

NAMING A CUSTOM PEDAL REGISTRATION

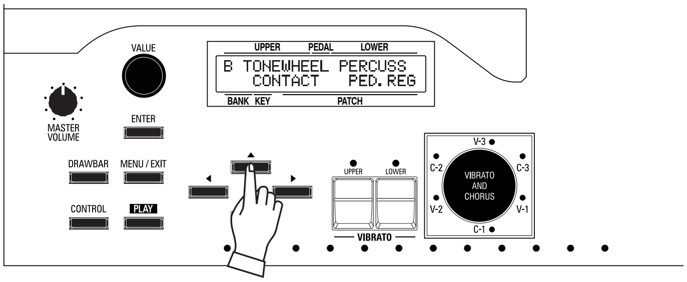
After you have created and saved a Custom Contact, you may give it a unique name if you wish. To do this:

1 LOCATE THE MENU Mode


A DRAWBAR PATCH
TUNE CONTROL
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS
V-3
C-3
V-1
C-1
V-2
C-2
VIBRATO

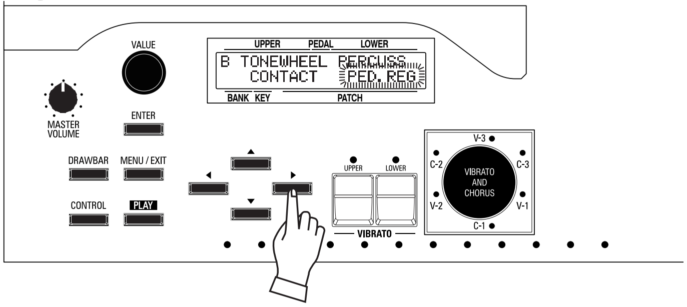
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


B TONEWHEEL PERCUSS
CONTACT PED.REG
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

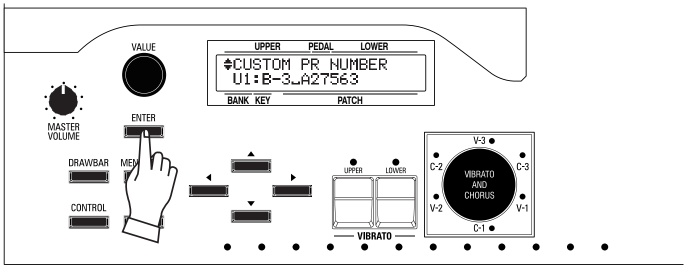
Press the [▲] Touch Button to display the B Menu.

3 SELECT THE PED.REG EDIT MENU


B TONEWHEEL PERCUSS
CONTACT PED.REG
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

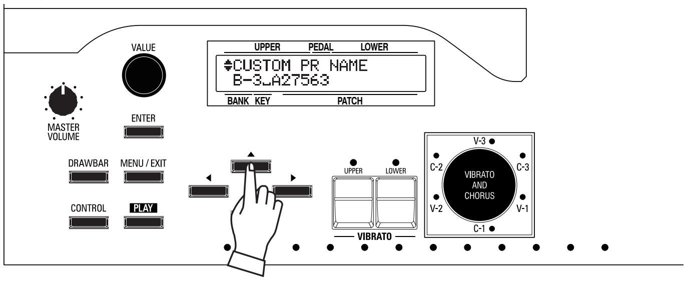
Press the [▶] Touch Button three times. "PED.REG" should blink.

4 GO TO PED.REG FUNCTION Mode


♦CUSTOM PR NUMBER
U1:B-3_A27563
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
VIBRATO AND CHORUS
VIBRATO

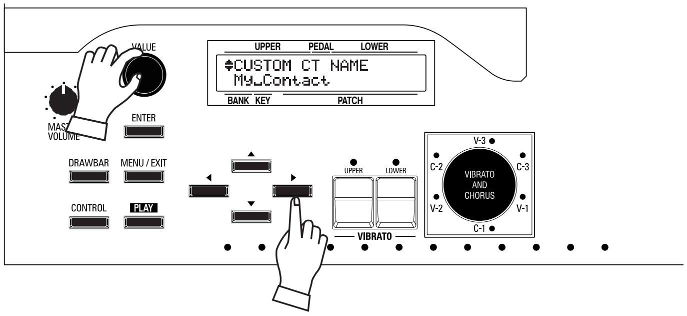
Press [ENTER] to enter PED.REG FUNCTION Mode.

5 SELECT THE PED.REG NAME PAGE


♦CUSTOM PR NAME
B-3_A27563
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

Press the [▲] Touch Button to select the Custom Pedal Registration Name page.

6 INPUT THE NAME

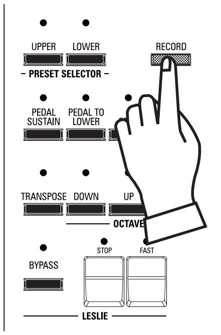

♦CUSTOM CT NAME
My_Contact
UPPER
PEDAL
LOWER
BANK KEY
PATCH
VALUE
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons:	Moves the cursor.
[VALUE] Rotary Knob:	Selects characters.

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

7


UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished naming your Custom Pedal Registration, press the [RECORD] Touch Button. The display will show:

"[ENT] to Overwrite"

on the bottom line.

8

Press [ENTER] to record the Custom Pedal Registration with your custom name. The display will show,

"Recording Ped.Regist..." for approximately 1 second.

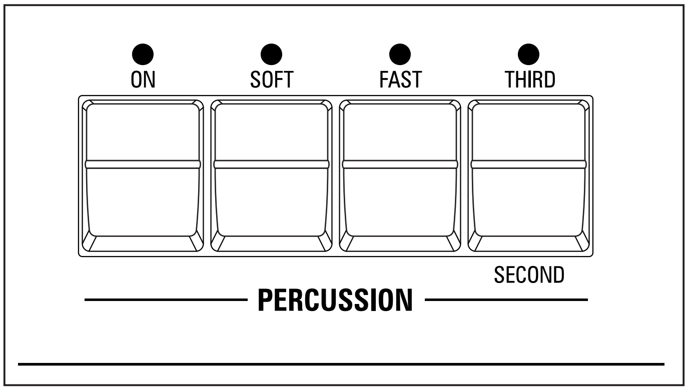
When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Pedal Registration, press the [MENU/EXIT] or [PLAY] Touch Button.

PERCUSSION

An important component of the Hammond Sound is "Touch-Response Percussion Control™."

The Percussion controls on the XK-5 consist of four separate tabs, located immediately to the right of the Drawbars, which control harmonic Percussion tones playable from the Upper Manual. They control all the same functions as the tilt tablets on a tone-wheel Hammond.



[ON] tab

This tab, when "ON" (LED lit), turns the Percussion effect "ON." The Percussion tone will sound in accordance with the settings for the other three Percussion controls.

NOTE: In the "ON" position, all of the Upper Manual Drawbars will be effective except the 1' (fourth white) Drawbar. This duplicates the performance of a tone-wheel organ. In the "OFF" position, the 1' Drawbar is effective as usual. However, you can change this parameter if you wish. See the next page for more information on how to do this.

[SOFT] tab

This tab regulates the volume of the Percussion tone. When it is "OFF" (LED not lit), the Percussion effect will be very prominent. It will also be noticed that the tones from the Drawbars are reduced in volume to compensate for the addition of the Percussion tones. When this tab is "ON" (LED lit), the Percussion effect is much less prominent. The volume of the Drawbar tones remains unaffected by the addition of the Soft Percussion effect.

[FAST] Touch Tab

When this tab is "OFF" (LED not lit) the Percussion tone will decay slowly like a bell. When it is "ON" (LED is lit) the Percussion tone will decay rapidly like a xylophone.

[THIRD] tab

This tab determines the pitch at which the Percussion tone sounds. When set at "SECOND" (LED not lit), the pitch is up one octave with respect to the Fundamental (8') Drawbar; when set at "THIRD" the Percussion pitch is up an octave and a fifth with respect to the Fundamental Drawbar.

NOTE: You can adjust the parameters of the Percussion to your liking. See the next page for more information on how to do this.

NOTE: As on a tone-wheel organ, the Percussion tones are normally available only with the second group of Upper Manual Drawbars. Thus the "B" Preset Key must be active to obtain Percussion. However, you can set the Percussion so that it is available on every Preset Key if you wish. See page 104, "PATCH LOAD PARAMETERS," for more information on how to do this.

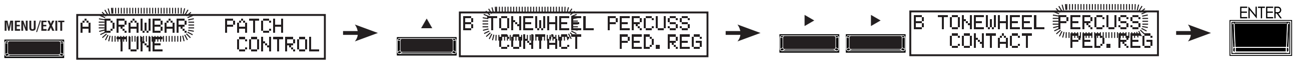
tips **USING PERCUSSION**

When Percussion is used, the sound of the 1´ Drawbar is canceled just as on a typical tone-wheel organ. Therefore, a common registration technique used by jazz organists is to keep the 1' Drawbar out all the way, and turn the Percussion "ON" AND "OFF" while playing for a dramatic and easy change in sound.

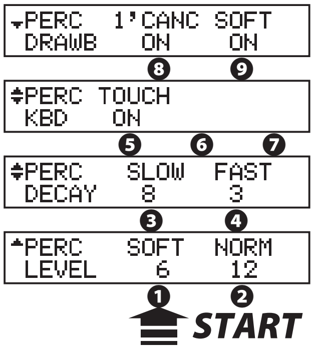
PERCUSSION Edit Menu (PERCUSS)

This Edit Menu allows you to make changes to the Percussion tones.

To locate this Menu, follow the steps below:



Or, Press and Hold any of the four Percussion Touch Tabs ([ON], [THIRD], [FAST], [SOFT]).



❶ LEVEL - SOFT

❷ LEVEL - NORMAL

This allows you to control the Percussion volume levels. The Normal level is set by the NORM setting, and SOFT is the level when the [SOFT] Touch Tab is "ON."

❸ DECAY - SLOW

❹ DECAY - FAST

This allows you to control the Percussion decay time. The Slow rate is set by SLOW setting, and FAST is the time when the [FAST] Touch Tab is ON.

The setting range is 1 to 9 and C. As the value is raised, the decay time grows longer. At C (continuous) there is no decay, and the Percussion sound is sustained while keys are pressed.

❺ KEYBOARD - TOUCH

This allows you to set the touch response of the Percussion.

OFF:	Percussion will sound only if you play the keys in a detached manner (non-legato). Any degree of detachment is sufficient.
ON:	Each key will sound when played regardless of whether other keys are being held.

❻ KEYBOARD - VELOCITY

This allows you to turn Percussion Velocity Sensitivity "ON" or "OFF."

ON:	The volume of Percussion is controlled by how fast keys are played. The faster keys are played, the louder the Percussion sounds.
OFF:	Each key will sound at the same volume level when played regardless of the speed or force with which the keys are struck..

❼ KEYBOARD - KEY TRACK

On a tone-wheel Hammond Organ with Touch-Response Percussion Control, the Percussion sounds would taper off slightly at higher frequencies. This feature replicates this characteristic of the Percussion.

ON:	The higher the note is, the lesser the volume.
OFF:	No change in volume.

❽ DRAWBAR - 1´ CANCEL

This allows you to cancel the Upper 1´ Drawbar while using Percussion.

ON:	The 1' Drawbar will be canceled when Percussion is "ON." This replicates the original Hammond Organs with Touch-Response Percussion Control.
OFF:	The 1' Drawbar will continue to sound while Percussion is "ON." This replicates later Hammond Organs with Percussion.

❾ DRAWBAR - SOFT

This allows you to reduce the Upper Drawbar volume while using the Percussion if the [SOFT] tab is "OFF" (LED not lit).

ON:	The volume level of the Drawbars will be reduced by 3 decibels, or a small amount, when Percussion is "ON" at Normal volume. This replicates the original Hammond Organs with Touch-Response Percussion Control.
OFF:	The volume of the Drawbars will stay at the same level, or "0db," when Percussion is "ON" at Normal volume. This replicates later Hammond Organs with Percussion.

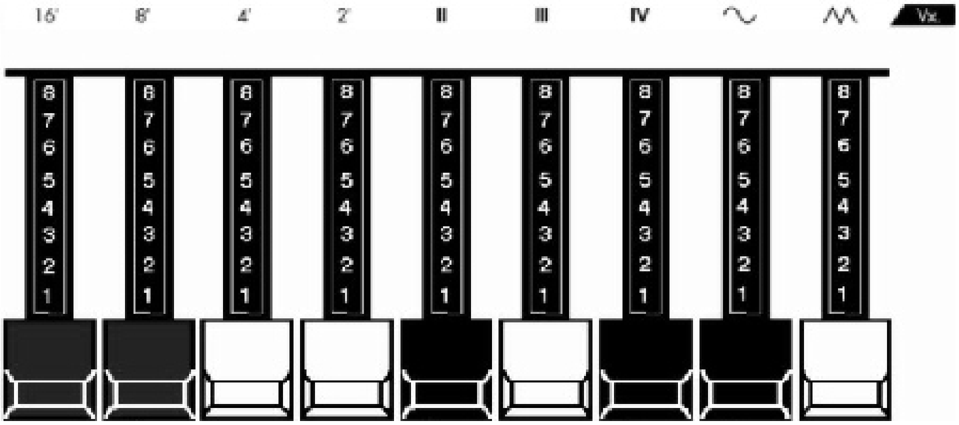
NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

The Drawbars on the XK-5 can be made to control 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. See page 52 for information on selecting the various Drawbar Organ Types.

◆ 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.

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.

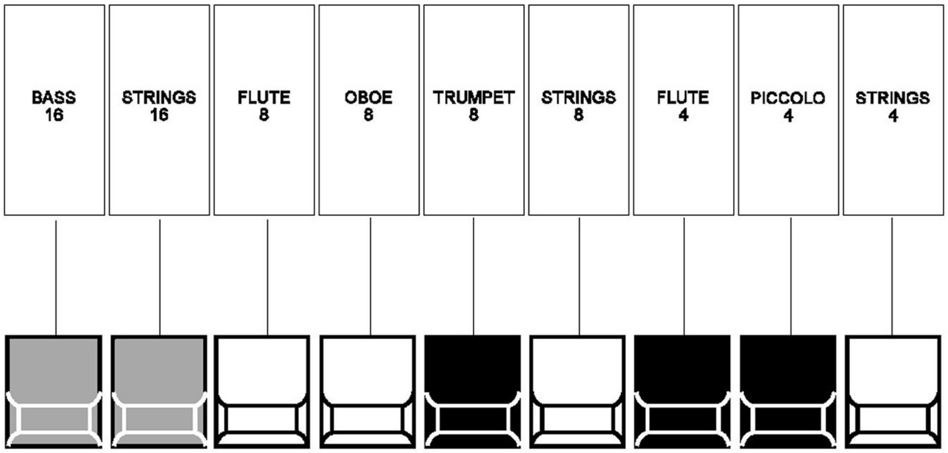
The last two Drawbars control the type of tone produced by the first seven Drawbars. The eighth Drawbar causes pure tones to sound while the last Drawbar causes brighter and more harmonically complex tones to sound.

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 "Farf" Drawbar Organ Type allows you to use the Drawbars to register the sound of a vintage Italian combo organ.

The figure below shows how the Drawbars are allocated in "Farf" mode.

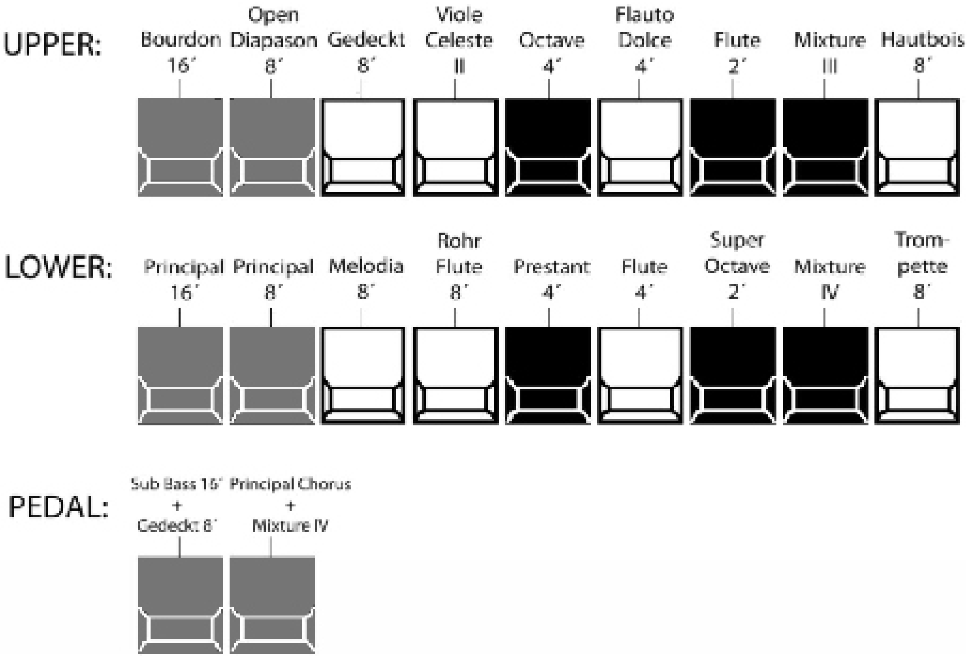

BASS 16
STRINGS 16
FLUTE 8
OBOE 8
TRUMPET 8
STRINGS 8
FLUTE 4
PICCOLO 4
STRINGS 4

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 XK-5, 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 control the voices of a classical pipe organ.
The figure below shows how the Drawbars are allocated in “Pipe” mode.

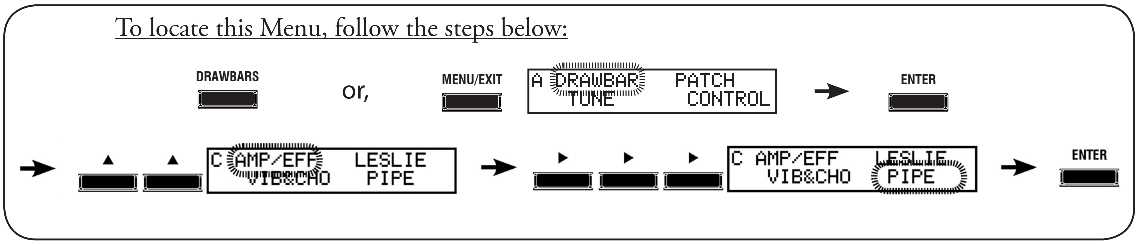

UPPER:
Bourdon 16′
Open Diapason 8′
Gedeckt 8′
Viole Celeste II
Octave 4′
Flauto Dolce 4′
Flute 2′
Mixture III
Hautbois 8′
LOWER:
Principal 16′
Principal 8′
Melodia 8′
Rohr Flute 8′
Prestant 4′
Flute 4′
Super Octave 2′
Mixture IV
Trom-pette 8′
PEDAL:
Sub Bass 16′ + Gedeckt 8′
Principal Chorus + Mixture IV

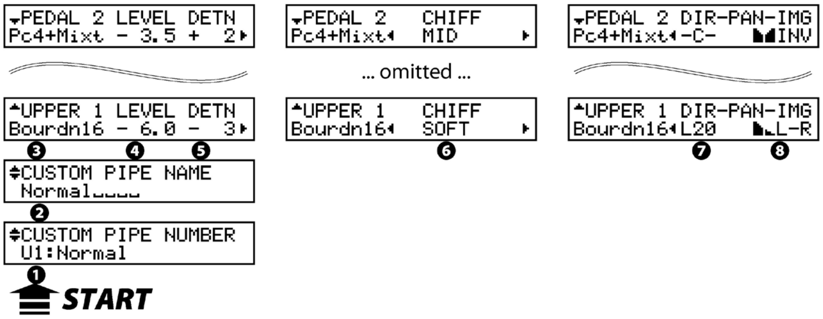
IMPORTANT NOTE: When “Pipe” mode is activated, the Drawbars will function similar to drawstops on a traditional pipe organ - pulling a Drawbar “out” will turn the associated Pipe Voice “ON” while pushing the Drawbar “in” will turn the Pipe Voice “OFF.” The Pipe Voices do not have gradations of volume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

PIPE Edit Menu

This Menu Page a allows you to change the characteristics of the Drawbar Pipe Voices.

To locate this Menu, follow the steps below:


DRAWBARS
or,
MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
ENTER
C AMP/EFF LESLIE
VIB&CHO PIPE
C AMP/EFF LESLIE
VIB&CHO PIPE
ENTER


PEDAL 2 LEVEL DETN
Pc4+Mixt - 3.5 + 2
PEDAL 2 CHIFF
Pc4+Mixt MID
PEDAL 2 DIR-PAN-IMG
Pc4+Mixt -C- INV
... omitted ...
UPPER 1 LEVEL DETN
Bourdn16 - 6.0 - 3
UPPER 1 CHIFF
Bourdn16 SOFT
UPPER 1 DIR-PAN-IMG
Bourdn16 L20 L-R
❸ ❹ ❺ ❻ ❼ ❽
CUSTOM PIPE NAME
Normal
❷
CUSTOM PIPE NUMBER
U1:Normal
❶
START

❶ CUSTOM PIPE NUMBER (P)

This allows you to select the Custom Pipe Number to use in a Patch. The setting range is “F1” to “F3” (non-rewritable) and “U1” to “U3” (rewritable).

NOTE: The “F” stands for Factory. Factory settings are permanently stored in memory and cannot be changed. Therefore, if you wish to edit or creata a Custom Pipe, use the “U” or User settings, which can be overwritten with your settings.

NOTE: If any of the Pipe Parameters are edited, an asterisk (“*”) will show in the upper left corner of the display. To save the changes you have made, save them as a Custom Pipe. This is explained on the next page.

NOTE: This parameter is a Patch Parameter and is recorded as part of a Patch.

◆ CUSTOM PIPE PARAMETERS

All of the parameters described below and on the next page collectively comprise a Custom Pipe. These parameters cannot be saved as individual Patch Parameters; however a Custom Pipe can be recorded as part of a Patch.

❷ CUSTOM PR NAME (PR)

This allows you to name the Custom Pipe using up to 10 characters.

Use the [◀] and [▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters.

NOTE: See page 65 for detailed instructions on naming Custom Pipes.

❸ PIPE VOICE

This allows you to select the Pipe Voice you want to edit

Use the [▲] and [▼] Touch Buttons to select the Pipe Voices.

❹ PIPE VOICE VOLUME

This allows you to adjust the volume of the selected Pipe Voice.

You can select a Volume setting of from “0” (softest) through “127” (loudest).

❺ PIPE VOICE DETUNE

This allows you to detune each individual Pipe Voice. You can select from “ -50” (quarter-step flat) through “+50” (quarter-step sharp).

tips SELECTING A PIPE VOICE TO EDIT

Your XK-5 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, making a total of 34 ranks. 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 (“PC4+Mixt”)

❻ PIPE VOICE CHIFF

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

You can select “OFF” (no Chiff), “SOFT” (sounds the chiff noise slightly), “MID” (medium amount of Chiff), or “LOUD” (maximum anmount of Chiff).Sounds the chiff noise maximum.

NOTE: The Chiff parameter does not affect the Reed voices (Hautbois 8’ and Trompete 8’).

❼ PIPE VOICE PAN

This allows you to to simulate different placements of pipe ranks.

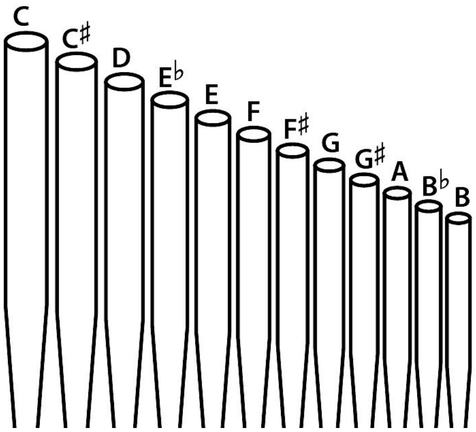
You can select from “L64” (the sound will be in the Left channel only) through “R63” (the sound will be in the Right channel only). Setting this parameter to “-C-” will locate the sound in the center.

NOTE: The Audio Mode must be set to “ST” (stereo) inorder for this parameter to take effect.

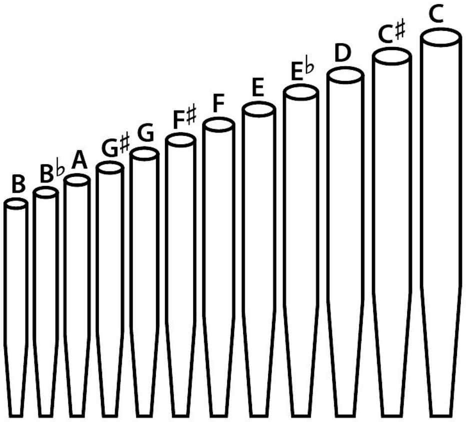
❽ PIPE VOICE IMAGING

This allows you to simulate different arrangements of pipes.

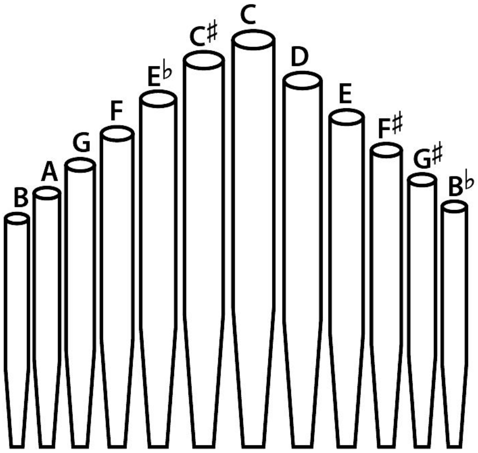
You can select “LtoR” (Left to Right - the pipes producing lower pitches are on the left. Playing notes chromatically going up on the keyboard will cause the pipes on the left to sound first), “RtoL” (Right to Left - the pipes producing higher pitches are on the right. Playing notes chromatically going up on the keyboard will cause the pipes on the left to sound first), “PYR” (Pyramid - when notes are played chromatically going up on the keyboard, the notes start in the center and alternate between left and right), “INV” (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) or “FIX” (no imaging - all the notes sound from the center).



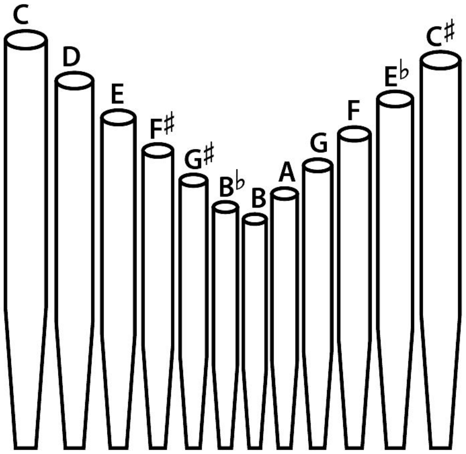
Left to Right



Right to Left



Pyramid



Inverted Pyramid

tips WHAT IS “CHIFF?”

There are two classifications of organ pipes based on the method used to produce sound. “Flue” or “labial” pipes produce sound by means of sending a stream of air through the body of the pipe, while “reed” or “lingual” pipes utilize a beating reed in a manner similar to a reed instrument such as a clarinet.

A flue pipe can be voiced in such a way so that a short attack transient is heard at the onset of the tone. The term, “chiff,” was coined by pipe organ makers to describe the sound. The amount of chiff can vary depending on the maker and the effect desired - some organ builders voice the flue pipes with little or no chiff while others, perhaps influenced by the “neo-baroque” school of organ building, deliberately strive to include the chiff effect.

tips WHAT IS “PIPE VOICE IMAGING?”

The pipes of a pipe organ are arranged into sets called ranks. Each ranks 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.)

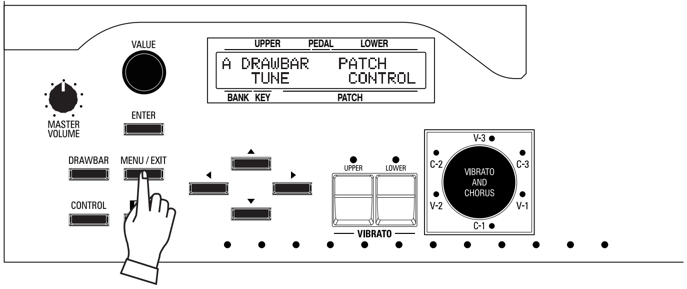
The pipes of each rank are supported by an assembly called a chest. The pipes can be arranged in many different ways on the chest. The pipe arrangement chosen by the maker depends on several things - aesthetics, musical, etc. - but the four most common ones are shown on the left.

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

CREATING & RECORDING A CUSTOM PIPE

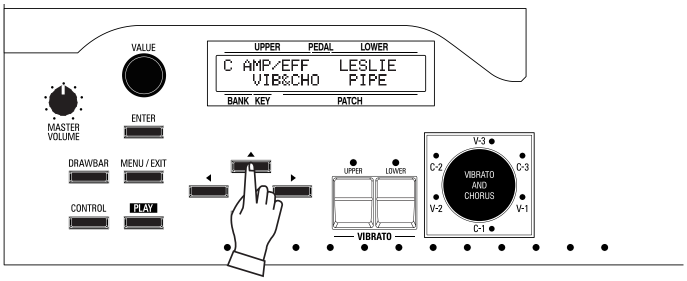
The Pipe parameters can be saved as a Custom Pipe. To record a Custom Pipe, do the following:

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

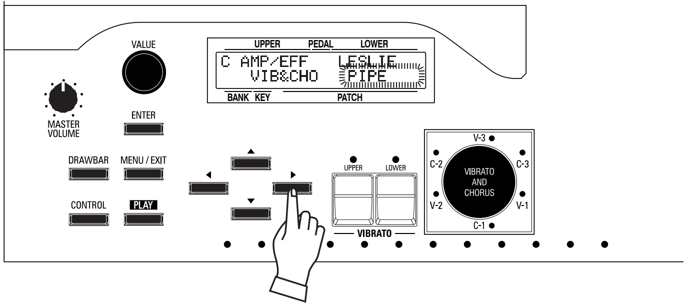
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU C


VALUE
UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

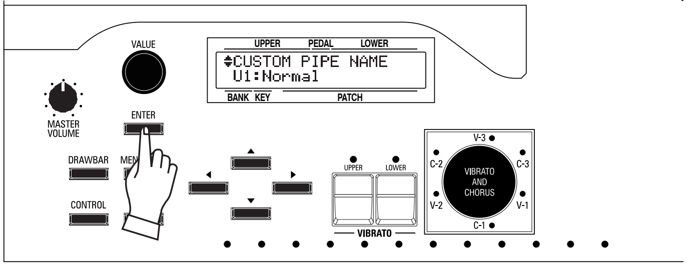
Press the [▲] Touch Button two times to display the C Menu.

3 SELECT THE PIPE EDIT MENU


VALUE
UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

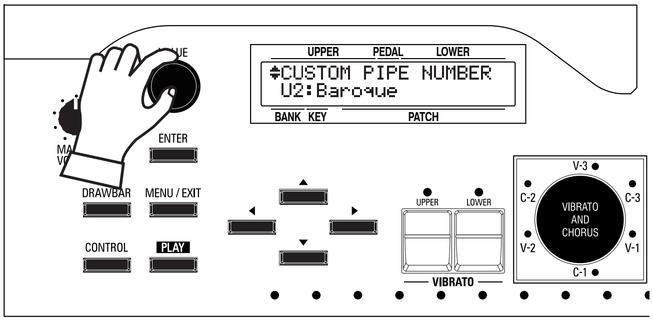
Press the [▶] Touch Button three times. "PIPE" should blink.

4 GO TO PIPE FUNCTION MODE


VALUE
UPPER PEDAL LOWER
♦CUSTOM PIPE NAME
U1:Normal
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Press [ENTER] to enter PIPE FUNCTION Mode.

5

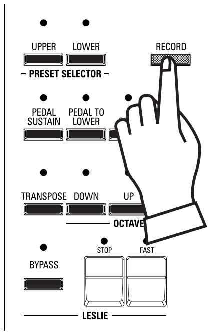

UPPER PEDAL LOWER
♦CUSTOM PIPE NUMBER
U2:Baroque
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Use the [VALUE] Rotary Knob to select the Custom Pipe you wish to edit.

6

Make whatever changes you wish to the Custom Pipe you have selected.

7

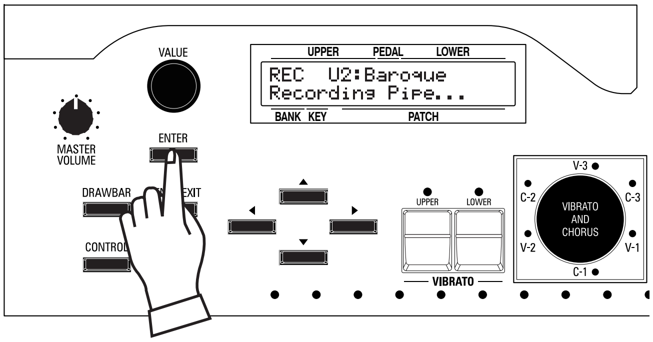

UPPER LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE DOWN UP
OCTAVE
BYPASS
STOP FAST
LESLIE

After you have finished editing your Custom Pipe, press the [RECORD] Touch Button. The display will show:

"[ENTER] to Overwrite"

on the bottom line.

8


VALUE
UPPER PEDAL LOWER
REC U2:Baroque
Recording Pipe...
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Press [ENTER] to record the Custom Pipe. The display will show, "Recording Ped.Regist..." for approximately 1 second.

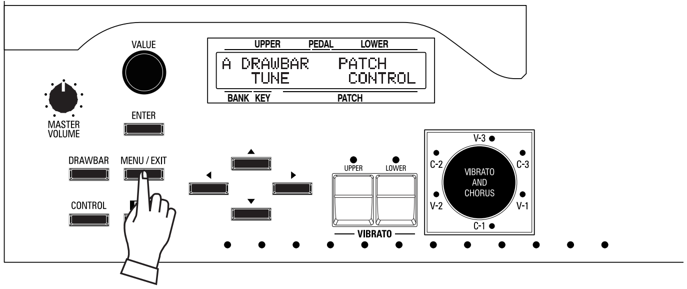
When the message no longer displays, your settings has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Pipe, press the [MENU/EXIT] or [PLAY] Touch Button.

NAMING A CUSTOM PIPE

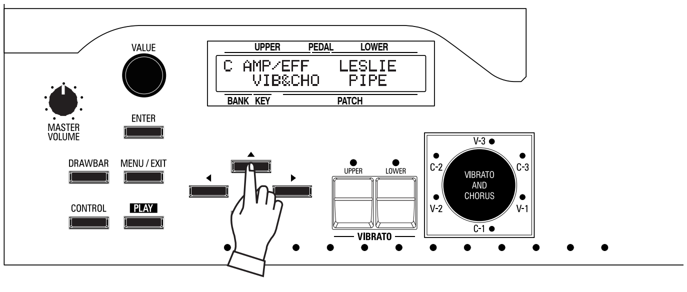
After you have created and saved a Custom Pipe, you may give it a unique name if you wish. To do this:

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

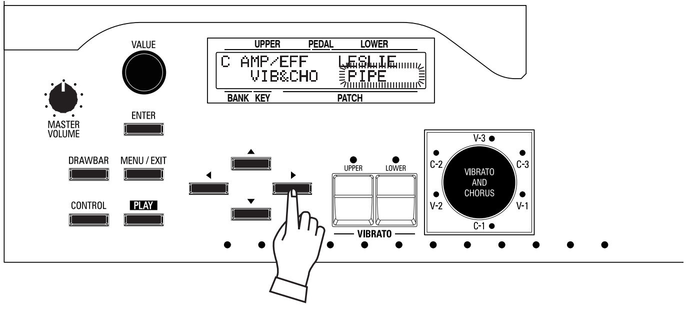
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU C


VALUE
UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

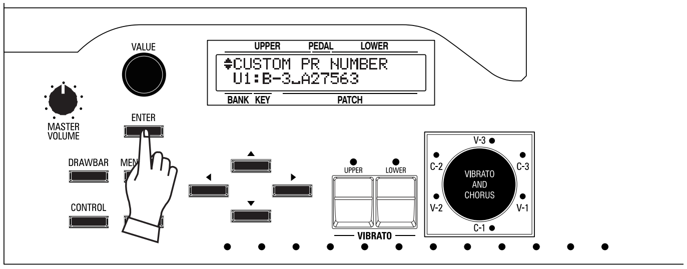
Press the [▲] Touch Button to display the C Menu.

3 SELECT THE PED.REG EDIT MENU


VALUE
UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

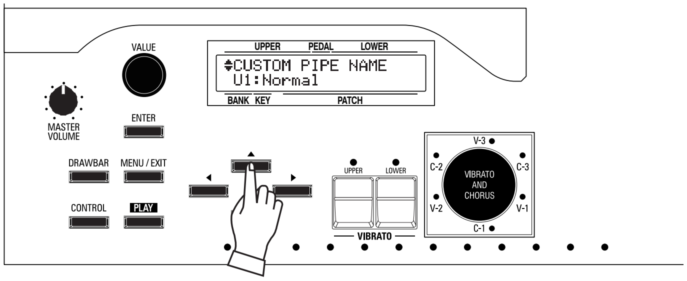
Press the [▶] Touch Button three times. “PIPE” should blink.

4 GO TO PIPE FUNCTION MODE


VALUE
UPPER PEDAL LOWER
⇕CUSTOM PR NUMBER
U1:B-3_A27563
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

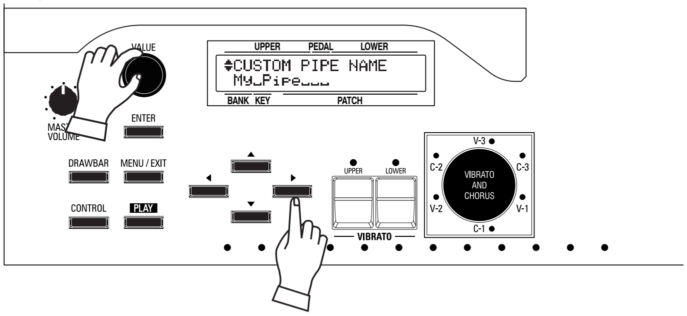
Press [ENTER] to enter PIPE FUNCTION Mode.

5 SELECT THE CUSTOM PIPE NAME PAGE


VALUE
UPPER PEDAL LOWER
⇕CUSTOM PIPE NAME
U1:Normal
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Press the [▲] Touch Button to select the Custom Pipe Name page.

6 INPUT THE NAME

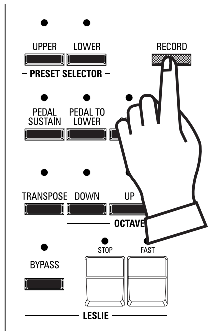

VALUE
UPPER PEDAL LOWER
⇕CUSTOM PIPE NAME
My_Pipe___
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons:	Moves the cursor.
[VALUE] Rotary Knob:	Selects characters.

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

7


UPPER LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE DOWN UP
OCTAVE
STOP FAST
BYPASS
LESLIE

After you have finished naming your Custom Pipe, press the [RECORD] Touch Button. The display will show:

“`[ENT] to Overwrite`”

on the bottom line.

8

Press [ENTER] to record the Custom Pipe with your custom name. The display will show,

“`Recording Pipe....`” for approximately 1 second.

When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Pipe, press the [MENU/EXIT] or [PLAY]Touch Button.

SPLIT

◆ SPECIAL NOTE

If you have the model A-3 or XK Heritage series, this section does not apply to you. The SPLIT feature is disabled for these instruments.

Also, the SPLIT feature is disabled if an XK-5 is connected to a Lower Manual such as the XLK-5 or XLK-3, or if a a MIDI keyboard is connected and used as a Lower Manual.

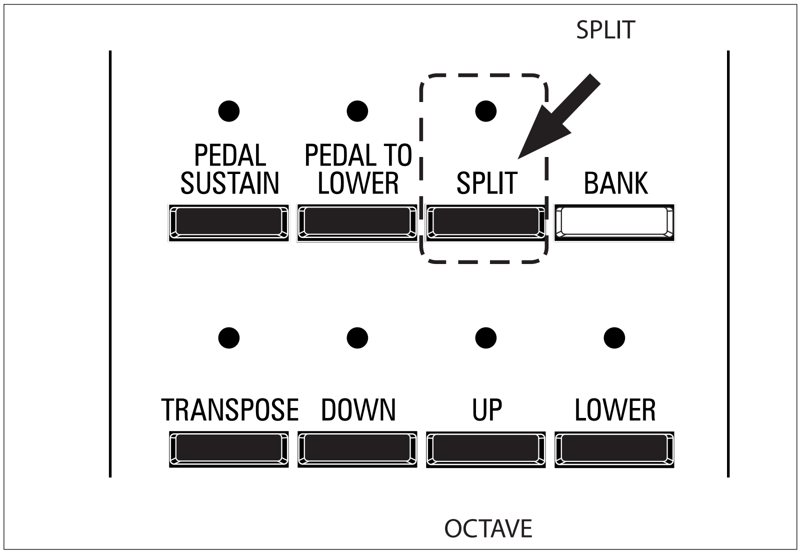
◆ SPLIT

When the XK-5 is played as a single-manual instrument, all the sounds and functions associated with "UPPER" will be operational throughout the entire range of the keyboard. However, the manual can be Split so that one sound can be played on one part of the manual and a different sound can be played on another part of the manual.

◆ "UPPER" AND "LOWER" MANUALS

When the manual is "Split," the effect is that of a conventional two-manual 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 XK-5 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 display. This is important to keep in mind because if you are using the XK-5 as a single-manual instrument and 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."

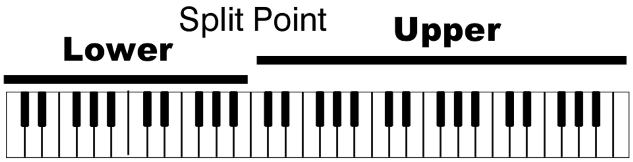


[SPLIT] Touch Button

Turns the Split "ON"(LED lit) and "OFF" (LED not lit).

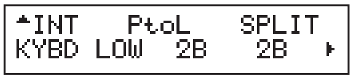
◆ CHANGING THE SPLIT POINT

The default Split point is between "2B" and "3C."



If you want to change the SPLIT point, do the following:

1. Press and Hold the [SPLIT] Touch Button. The display will show the following:



```
▴INT   PtoL   SPLIT
KYBD LOW  2B   2B  ▸
```

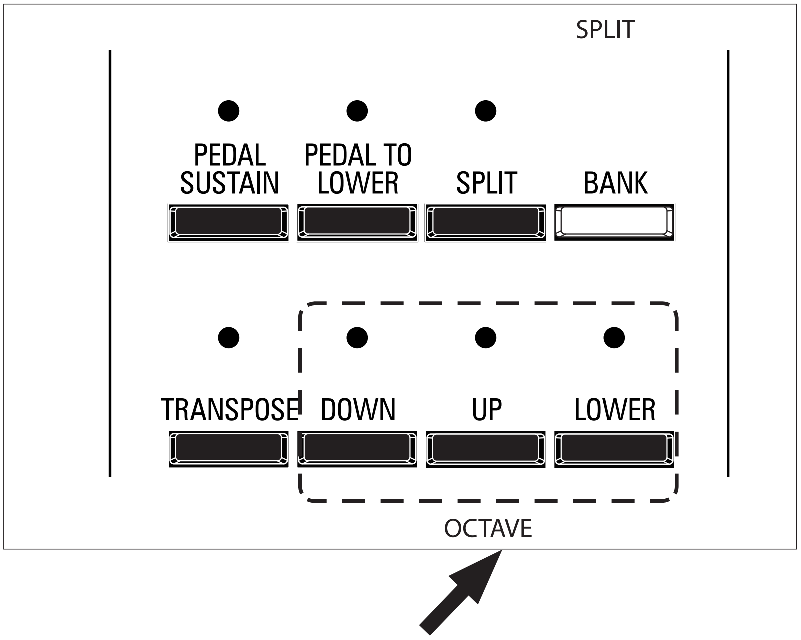
2. Press the [▶] Touch Button twice. The legend underneath "SPLIT" should now blink.

3. Turn the [VALUE] Rotary Knob to change the SPLIT point. You can select from "1C" (the lowest note on the manual) to "6C" (the highest note on the manual).

The value shown will be the upper note limit for the "LOWER" Manual.

◆ OCTAVE

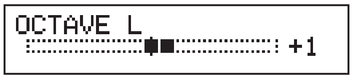
This feature allows you to select the Octave range in which the Manual will play. You can select "-2" (up to two octaves down) through +2" (up to two octaves up).


SPLIT
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
UP
LOWER
OCTAVE

[OCTAVE] Touch Buttons

Raises or Lowers each Manual by up to two octaves.

- To raise the Upper Manual, press the [UP] Touch Button.
- To lower the Upper Manual, press the [DOWN] Touch Button.
- To raise the Lower Manual, Press and Hold the [LOWER] Touch Button and press the [UP] Touch Button.
- To lower the Lower Manual, Press and Hold the [LOWER] Touch Button and press the [DOWN] Touch Button.



```
OCTAVE L
                 +1
```

Octave of LOWER is at "+1."

NOTE: When selecting Octaves, the status of the Octave is briefly shown on the display.

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DRAWBAR EFFECTS

VIBRATO & CHORUS

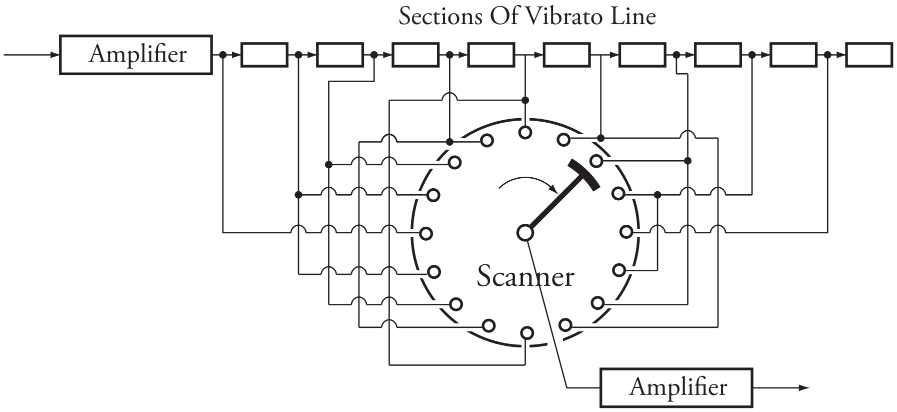
The Hammond Vibrato & Chorus is another hallmark of the "Hammond Sound."

"Vibrato" is created by a periodic raising and lowering of pitch, comparable to the effect produced when a violinist moves his finger back and forth on a string while playing, varying the frequency while maintaining constant volume.

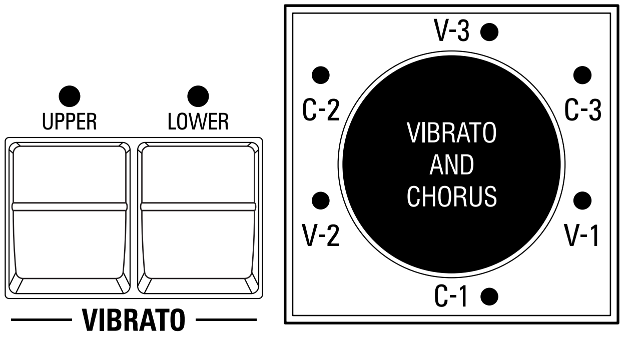
On a tone-wheel Hammond Organ equipped with Vibrato & Chorus, the vibrato circiutry consists of a series of plural coils or low-pass filter sections called a "delay line" or "line box" and a motor-driven "scanner" which, as the name implies, scans the delay line and progressively retards the phase, creating the Vibrato effect.

"Vibrato Chorus," an effect similar to the effect of two or three slightly out-of-tune frequencies mixed together, is obtained when the vibrato output signal is mixed with a portion of signal without vibrato.

The diagram below shows the vibrato equipment of a typical tone-wheel Hammond Organ such as a B-3.



The Vibrato & Chorus controls of the XK-5 are pictured below. Their function is similar to that on tone-wheel Hammonds such as B-3, C-3, A-100, RT-3 and D-100.



[UPPER] tab

Turns the Vibrato/Chorus "ON"(LED lit) and "OFF" for the Upper Manual.

[LOWER] tab

Turns the Vibrato/Chorus "ON"(LED lit) and "OFF" for the Lower Manual and Pedals.

[VIBRATO AND CHORUS MODE] Rotary Knob

Controls the depth of bothVibrato and Chorus.

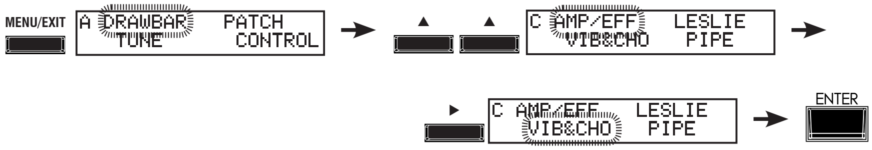
V-1: Lightest depth of Vibrato
V-2: Standard depth Vibrato
V-3: Wide Vibrato
C-1: Lightest depth of Chorus
C-2: Standard depth Chorus
C-3: Fullest amount of Chorus

NOTE: You can customize the Vibrato and Chorus effect to your liking. This is covered on the next page.

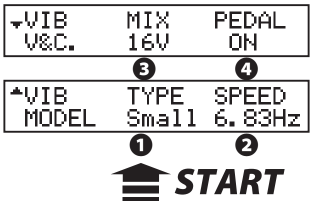
VIBRATO & CHORUS Edit Menu (VIB&CHO)

This Edit Menu allows you to make changes to the Vibrato and Chorus.

To locate this Menu, follow the steps below:



or, Press and Hold either the [ON UPPER] or [ON LOWER] Touch Tab.



❶ TYPE

Hammond tone-wheel organs with Vibrato & Chorus were manufactured from 1949 through 1975. During that time, several different types of vibrato circuits were employed, particularly line boxes of different construction. The Vibrato TYPE feature creates the effect of different types of Vibrato delay lines.

Metal: Metal Box
Big: Big Silver Box
Small: Small Silver Box

❷ SPEED

This allows you to set the Speed of the Vibrato and Chorus effect.

The setting range is 5.78 - 7.90 Hz (347 - 474 rpm).

The normal rate is 6.83 Hz (412 rpm).

❸ MIX

As noted on the previous page, Vibrato Chorus is obtained when the vibrato output signal is mixed with a portion of “dry” or non-vibrato signal. This allows you to adjust the balance between the vibrato and non-vibrato signals.

The setting range is “D64” (only the Direct tone, no vibrato tone) - EVEN - 63V (only the Vibrato tone, no direct tone).

❹ PEDAL

This allows you to select whether Vibrato or Chorus will affect the Pedal tones when the [LOWER] tab is “ON.”

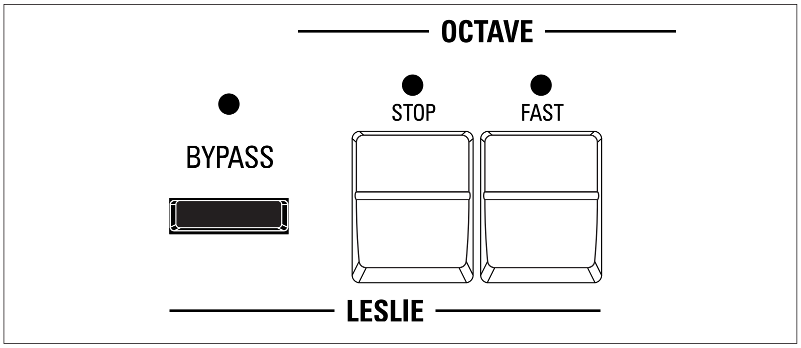
ON: The [LOWER] tab turns Vibrato/Chorus “ON” for both Lower Manual and Pedals as on a tone-wheel organ.

OFF: The [LOWER] tab turns Vibrato/Chorus “ON” for the Lower Manual only.

NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

LESLIE

The Hammond XK-5 has a built-in digital Leslie effect that replicates the sound of a twin-rotor Leslie Speaker cabinet. In addition, the instrument can also be used with a variety of different Leslie Speaker cabinets.



◆ WHAT IS THE LESLIE EFFECT?

When the Hammond Organ was first introduced in the mid 30's, the sound-producing apparatus was not contained within the console. A separate "tone cabinet" had to be connected to the organ console via a special cable. For many years, Hammond manufactured tone cabinets specifically for use with Hammond Organs. The best known of these is probably the PR-40 model.

In the late 30's, an independent engineer and organ enthusiast named Donald J. Leslie 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.) Many models of Leslie Speakers have been made over the years; probably the best known being the models 122, 142, 145 and 147.

The built-in digital Leslie effect on the XK-5 reproduces all three modes - Fast, Slow and Off. In addition, all three modes are available when the XK-5 is connected to an 11-pin Leslie Speaker cabinet.

[FAST] Touch Tab

Toggles between "FAST" (LED lit) and "SLOW" (LED not lit).

[STOP] Touch Tab

To toggle between "FAST" and "SLOW" when the [FAST] Touch Tab is pressed, turn this button "OFF" (LED not lit).

To toggle between "FAST" and "STOP" when the [FAST] Touch Tab is pressed, turn this button "ON" (LED lit).

[BYPASS] Touch Button

When the LED for this button is "OFF," the sound is output from the rotary channel (Leslie effect).

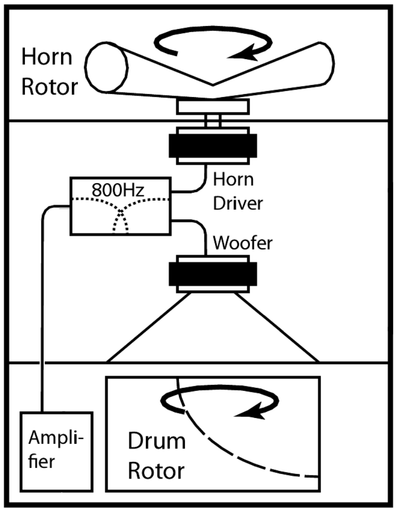
To bypass the Leslie effect, press this button and LED will light. Regardless of the status of the [FAST] or [STOP] Touch Tabs, the sound will be heard from the Stationary channel.

NOTE: You can customize the digital Leslie to your preference. This is explained starting on the next page.

tips STATUS CHART OF EACH BUTTON

BUTTON			MODE	
BYPASS	STOP	FAST	CH=1	CH=3, on-board Leslie effect
Off	Off	On	Fast	
Off	Off	Off	Slow	
Off	On	On	Fast	
Off	On	Off	Stop	
On	On	On	Fast	Bypass
On	On	Off	Stop	
On	Off	On	Fast	
On	Off	Off	Slow	

Diagram of a typical Leslie Speaker



◆ LESLIE PARAMETERS

The Hammond XK-5 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. Delay Time for both Horn and Bass Rotor.
7. Level or Volume for Horn and Bass Rotor and Sub-Woofer.
8. Microphone Settings (Width, Center and Distance)

◆ WHAT IS A "CUSTOM LESLIE CABINET?"

The following pages explain how to set the 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 **Custom Leslie Cabinet**.

The XK-5 has 16 different Custom Leslie Cabinets. Eight (8) of these are User Cabinets (indicated by a "U") while the other eight (8) are Factory Cabinets (indicated by an "F"). The Factory 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 Custom Leslie Cabinet you wish to use or modify, as well as name a 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 Custom Leslie Cabinet.

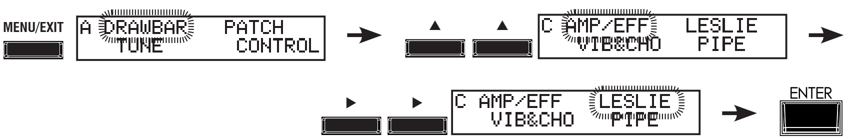
Please consult pages 68 through 72 for more information about creating, saving and naming your own Leslie Cabinets. Also consult the APPENDIX at the back of this Guide for a list of the preset Custom Leslie Cabinets.

LESLIE Edit Menu

This Edit Menu allows you to make various changes to the characteristics of the inbuilt digital Leslie.

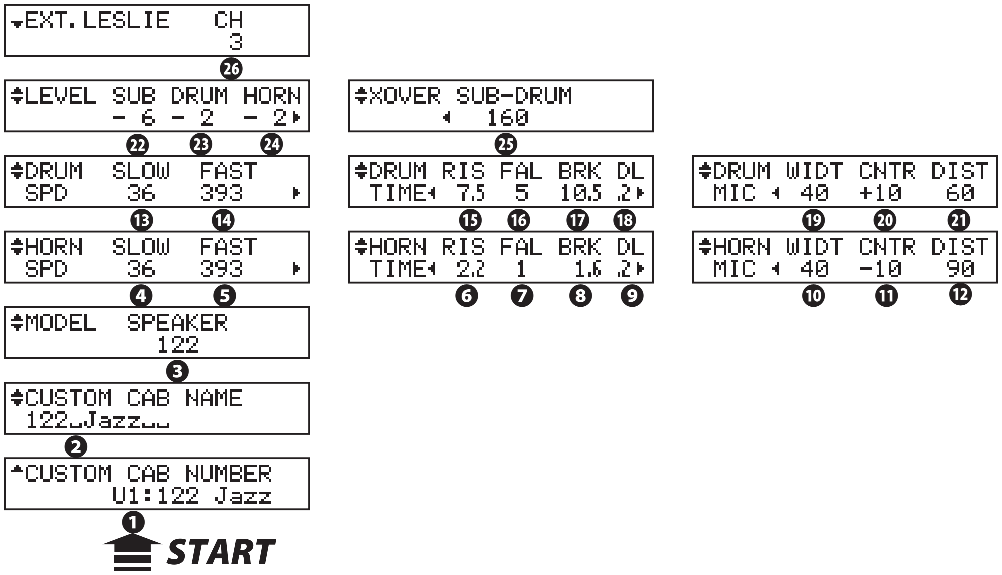
As explained on the previous page, the XK-5 has a library of Leslie Cabinets consisting of different settings for each of the Leslie Parameters. Therefore, before editing these Parameters, it is a good idea first to select the Leslie Cabinet you want to modify. You can then save your changes to your own custom Cabinet. (Remember that the Leslie Cabinets which can be overwritten are the User Cabinets, or the Cabinets prefaced by a "U" in the display.

To locate this Menu, follow the steps below:



MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲
▲
C AMP/EFF LESLIE
VIB&CHO PIPE
►
►
C AMP/EFF LESLIE
VIB&CHO PIPE
ENTER

or, Press and Hold the [BYPASS] Touch Button or the [STOP] or [FAST] Touch Tab.



EXT. LESLIE CH 3
㉖
LEVEL SUB DRUM HORN - 6 - 2 - 2
㉒ ㉓ ㉔
XOVER SUB-DRUM 160
㉕
DRUM SLOW FAST SPD 36 393
⑬ ⑭
DRUM RIS FAL BRK DL TIME 7.5 5 10.5 .2
⑮ ⑯ ⑰ ⑱
DRUM WIDT CNTR DIST MIC 40 +10 60
⑲ ⑳ ㉑
HORN SLOW FAST SPD 36 393
④ ⑤
HORN RIS FAL BRK DL TIME 2.2 1 1.6 .2
⑥ ⑦ ⑧ ⑨
HORN WIDT CNTR DIST MIC 40 -10 90
⑩ ⑪ ⑫
MODEL SPEAKER 122
③
CUSTOM CAB NAME 122␣Jazz␣␣
②
CUSTOM CAB NUMBER U1:122 Jazz
①
START

◆ CABINET NUMBER

❶ CUSTOM CAB NUMBER (P)

This allows you to select the Custom Cabinet Number to use in a Patch.

The setting range is F1 to F8 (non-rewritable) and U1 to U8 (rewritable).

NOTE: If any of the Custom Leslie Cabinet parameters are edited, an asterisk ("*") will show in the upper left corner of the display. To save the changes you have made, save them as a Custom Leslie Cabinet. This is explained on page 69.

NOTE: This parameter is a Patch Parameter and is recorded as part of a Patch.

◆ CUSTOM LESLIE CABINET PARAMETERS

All of the parameters described below and on the next page collectively comprise a Custom Leslie Cabinet. These parameters cannot be saved as individual Patch Parameters; however a Custom Leslie Cabinet can be recorded as part of a Patch.

❷ CUSTOM CAB NAME (L)

This allows you to name a Custom Leslie Cabinet. Use up to 10 characters.

Use the [◀][▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters.

NOTE: See page 70 for detailed instructions on naming Custom Leslie Cabinets.

❸ SPEAKER (L)

This allows you to select the virtual speaker type.

145:	Leslie 145, small rotary speaker system
147:	Leslie 147, large rotary speaker system
122:	Leslie 122, large rotary speaker system
PR-40:	Hammond PR-40, stationary speaker system

❹ / ⓭ SLOW SPEED - HORN / DRUM (L)

These allow you to set the rotor speed for the Slow or Chorale mode.

The setting range is 0, 24 to 318 rpm.

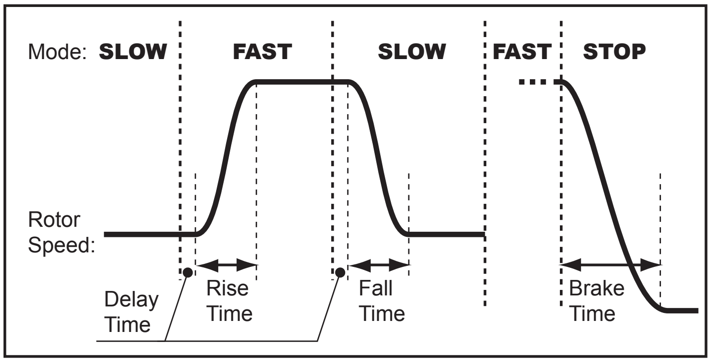
❺ / ⓮ FAST SPEED - HORN / DRUM (L)

These allow you to set the rotor speed on the "FAST" or Tremolo mode.

The setting range is 0, 375 to 453 rpm.

❻ / ⓯ RISE TIME - HORN / DRUM (L)

These allow you to set the time for the rotors to "ramp up" to the "FAST" speed,when switching from "SLOW" or "STOP" to the "FAST" mode.



The setting range for the Horn rotor is 0.2 to 5.0 sec., and the Bass rotor is 0.5 to 12.5 sec.

❼ / ⓰ FALL TIME - HORN / DRUM (L)

These allow you to set the time for the rotor to reach the 'Slow Speed', when switching from "FAST" to "SLOW" mode.

The setting range for the Horn rotor is 0.2 to 5.0 sec., and the Bass rotor is 0.5 to 12.5 sec.

❽ / ⓱ BRAKE TIME - HORN / DRUM (L)

These allow you to set the time for the rotor to stop, when switching from "FAST" to the "STOP" mode.

The setting range for the Horn rotor is 0.2 to 5.0 sec., and the Bass rotor is 0.5 to 12.5 sec.

❾ / ⓲ DELAY TIME - HORN / DRUM (L)

These allow you to set the time to the speed starts changing, when the mode is switched.

The setting range is 0 to 0.8 sec.

❿ / ⓳ MIC WIDTH - HORN / DRUM (L)

These allow you to set the Virtual Leslie Speaker at which location the Microphones should be placed.

"Width" sets the distance between the left and the right microphones. The setting range is 0 to 40. The value increases makes wider stereophonic. At "0," mono.

⓫ / ⓴ MIC CENTER - HORN / DRUM (L)

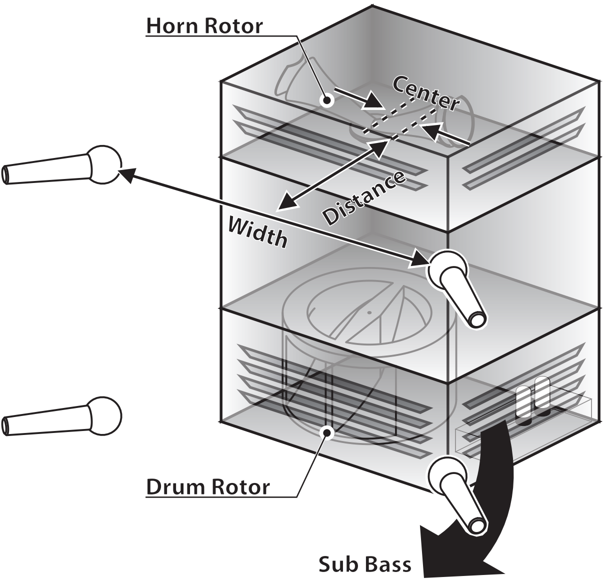
These allow you to set the offset between the center of two microphones and pivot of the rotor.

The setting range is -50 to +50 cm. The virtual Leslie speaker turns counter clockwise for Horn rotor, and clockwise for Drum rotor. To emphasize the 'upcoming', set the '+' value for Horn rotor, and '-' value for Drum rotor.

⓬ / ㉑ MIC DISTANCE - HORN / DRUM (L)

These allow you to set the distance between the Virtual Leslie Speaker and the microphones.

The setting range is 30 to 200 cm. The value decreases makes deeper effect.



㉒ / ㉓ / ㉔ LEVEL - SUB BASS / DRUM / HORN (L)

These allow you to set the volume levels of the each rotor and the sub bass sound not modulated with the Drum rotor.

The setting range is -12 to 0 dB.

㉕ CROSSOVER

These allow you to is set the diverging point of the frequencies of the Sub Bass and the Drum rotor respectively.

The setting range is 20 to 248 Hz. The higher the value rises, the more lowered are the modulation effects of the Pedals.

◆ EXTERNAL LESLIE SPEAKER

㉖ LESLIE CHANNELS

This allows you to select the channel setting for the Leslie speaker connected to the LESLIE 11-PIN jack.

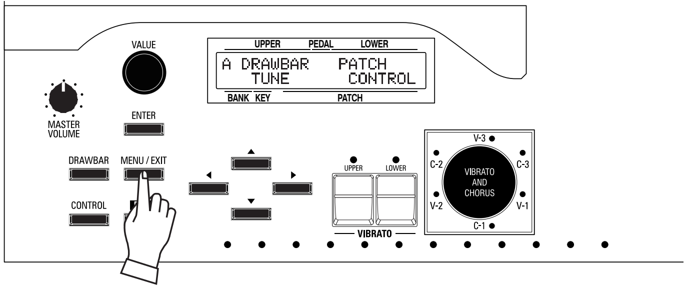
1ch:	For connecting a single-channel Leslie Speaker cabinet such as a 122XB, 3300/3300W or 981.
3ch:	For connecting a 3 channel Leslie such as a model 2101 or 2101 mkII. The Drawbar and Percussion sounds will play through the Rotary channel except when the [BYPASS] Touch Button is "ON,," in which case the sounds will play through the Stationary channels (Left [Main] and Right [Aux, Sub, Animation]).

NOTE: This is a System Parameter, and is common to all Patches.

CREATING AND RECORDING A LESLIE CABINET

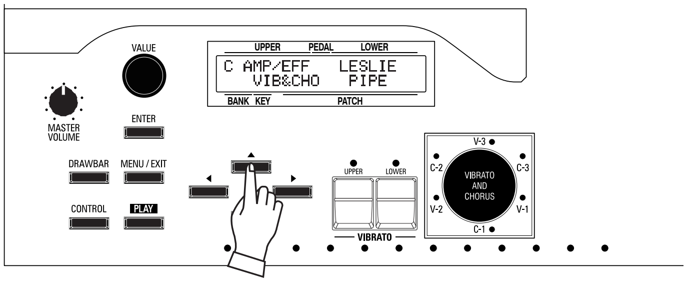
The Leslie Parameters (= 2 - 11 of the previous page) can be saved as a Leslie Cabinet. To record a Leslie Cabinet, do the following:

1 LOCATE THE MENU Mode


A DRAWBAR PATCH
TUNE CONTROL
VALUE
ENTER
MENU / EXIT
DRAWBAR
CONTROL
MASTER VOLUME
VIBRATO AND CHORUS

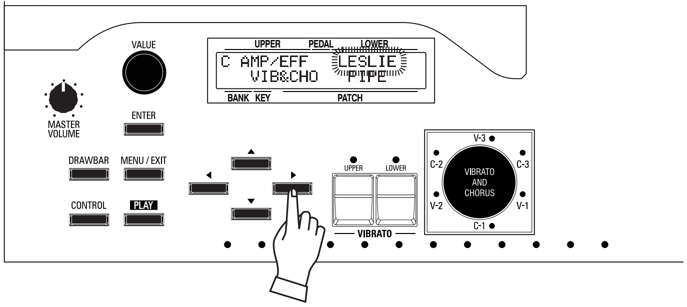
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU C


C AMP/EFF LESLIE
VIB&CHO PIPE
PLAY

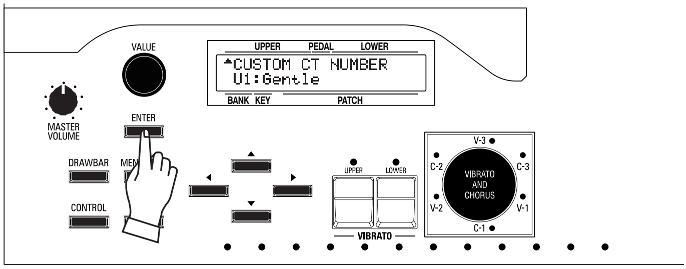
Press the [▲] Touch Button twice to display the C Menu.

3 SELECT THE LESLIE EDIT MENU


C AMP/EFF LESLIE
VIB&CHO PIPE

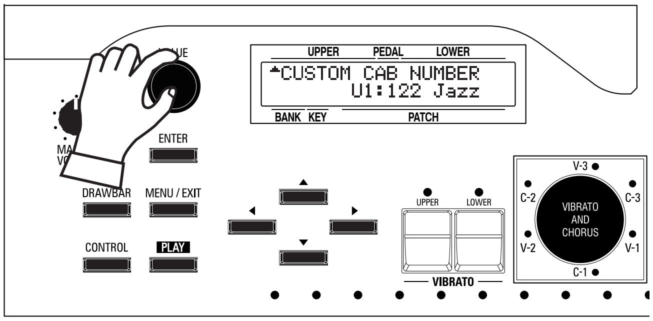
Press the [▶] Touch Button twice. The word "LESLIE" should blink.

4 GO TO LESLIE FUNCTION MODE


CUSTOM CT NUMBER
U1:Gentle
ENTER

Press [ENTER] to enter LESLIE FUNCTION Mode.

5

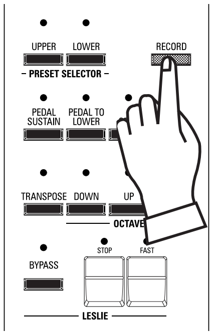

CUSTOM CAB NUMBER
U1:122 Jazz

Use the [VALUE] Rotary Knob to select the Custom Cabinet you wish to edit.

6

Make whatever changes you wish to the Custom Cabinet you have selected.

7

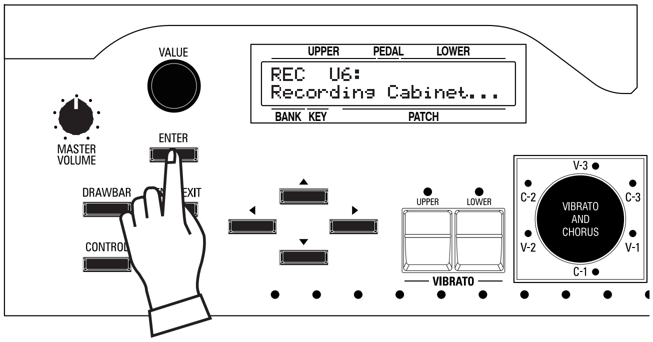

UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished editing your Custom Leslie Cabinet, press the [RECORD] Touch Button. The display will show:

"`[ENTER] to Overwrite`"

on the bottom line.

8


REC U6:
Recording Cabinet...
ENTER

Press [ENTER] to record the Custom Leslie Cabinet. The display will show, "`Recording Cabinet...`" for approximately 1 second.

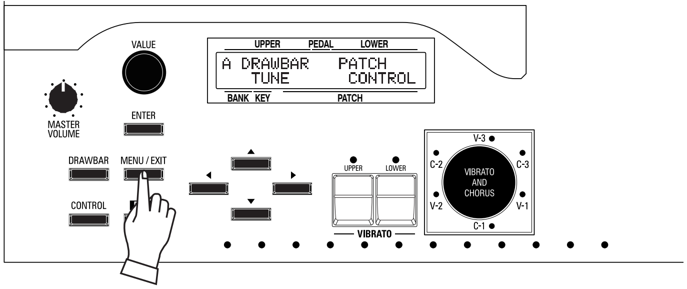
When the message no longer displays, your settings has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Leslie Cabinet, press the [MENU/EXIT] or [PLAY] Touch Button.

NAMING A LESLIE CABINET

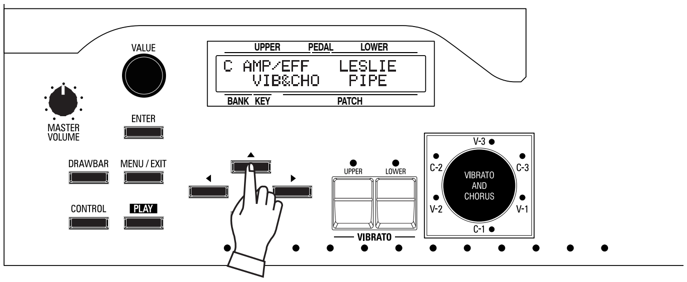
After you have created and saved a Custom Contact, you may give it a unique name if you wish. To do this, do the following:

1 LOCATE THE MENU Mode


UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

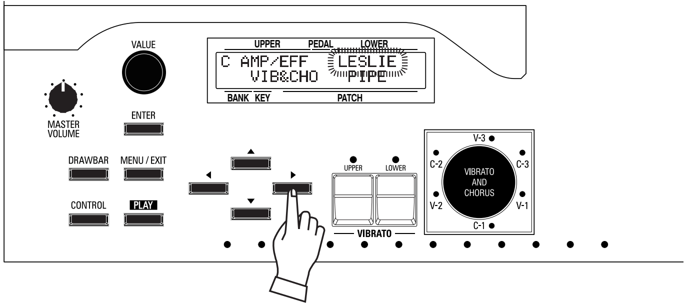
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU C


UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

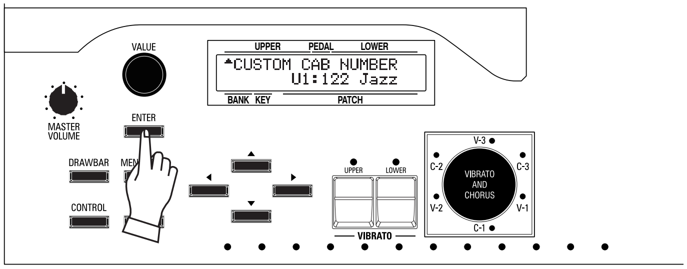
Press the [▲] Touch Button twice to display the C Menu.

3 SELECT THE LESLIE EDIT MENU


UPPER PEDAL LOWER
C AMP/EFF LESLIE
VIB&CHO PIPE
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

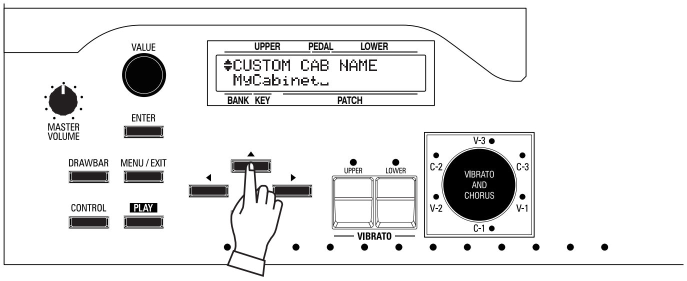
Press the [▶] Touch Button twice. The word "LESLIE" should blink.

4 GO TO LESLIE FUNCTION Mode


UPPER PEDAL LOWER
▲CUSTOM CAB NUMBER
U1:122 Jazz
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

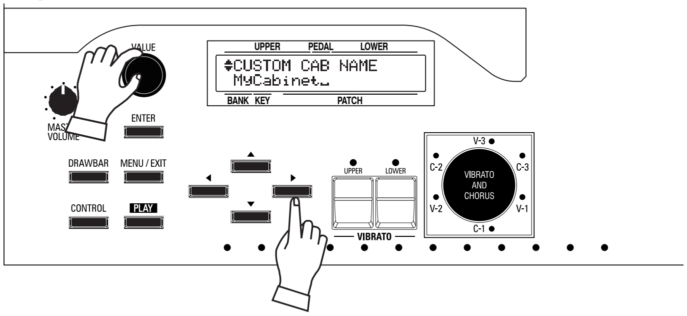
Press [ENTER] to enter LESLIE FUNCTION Mode.

5 SELECT THE LESLIE NAME PAGE


UPPER PEDAL LOWER
⇕CUSTOM CAB NAME
MyCabinet_
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [▲] Touch Button to select Page 2 of the LESLIE FUNCTION Mode.

6 INPUT THE NAME

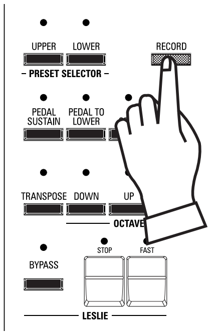

UPPER PEDAL LOWER
⇕CUSTOM CAB NAME
MyCabinet_
BANK KEY PATCH
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons: Moves the cursor.
[VALUE] Rotary Knob: Selects characters.

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

7


UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished naming your Custom Leslie Cabinet, press the [RECORD] Touch Button. The display will show: "`[ENTER] to Overwrite`" on the bottom line.

8

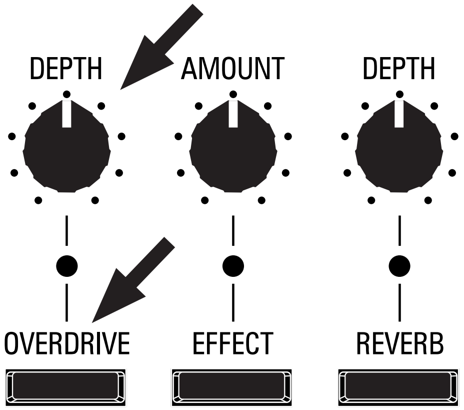
Press [ENTER] to record the Custom Leslie Cabinet with your custom name. The display will show, "`Recording Cabinet...`" for approximately 1 second.

When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Contact, press the [MENU/EXIT] or [PLAY] Touch Button.

OVERDRIVE

Overdrive adds distortion to the sound by increasing the pre-amplifier input gain. On the XK-5, the Overdrive feature is controller by an "ON / OFF" button and a Rotary Knob for controlling the amount of Overdrive. The [OVERDRIVE] Touch Button must be "ON" in order to hear the Overdrive effect.



[OVERDRIVE] Touch Button

Turns the Overdrive effect "ON" (LED lit) or "OFF" (LED not lit).

[OVERDRIVE DEPTH] Rotary Knob

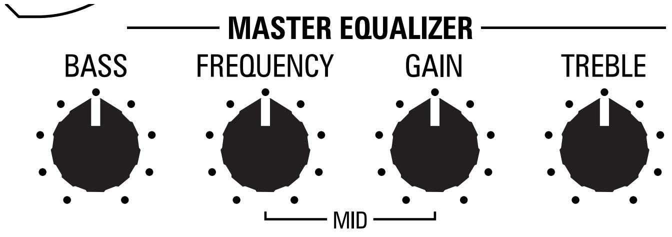
Adjusts the depth of the selected Overdrive effect.

NOTE: You can adjust the Overdrive parameters to your liking. The Overdrive parameters are contained in the AMP/EFF Edit Menu, which is described on page 83.

TEMPORARY EQUALIZING (MASTER EQUALIZER)

◆ 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 the XK-5 have this capability.



The MASTER EQUALIZER is located on the extreme right of the Control Panel. It allows you to adjust the overall frequency response of the entire instrument in real time. There are 4 Rotary Knobs which are described below.

1 BASS

This allows you to adjust the Boost/Cut of Bass.
The setting range is -9 to +9. It is flat At "0,".

2 MID FREQUENCY

This allows you to adjust the center frequency (Middle) to be attenuated.
The setting range is 250Hz - 3.1kHz.

3 MID GAIN

This allows you to adjust the Boost/Cut of Middle.
The setting range is -9 to +9. It is flat At "0,".

4 TREBLE

This allows you to adjust the Boost/Cut of Treble.
The setting range is -9 to +9. It is flat At "0,".

NOTE: These are live performance controls, and are not saved as part of a Patch.

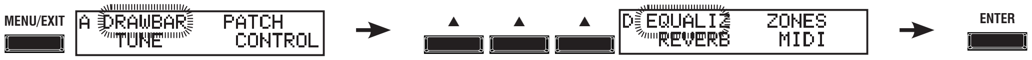
NOTE: You can change the corner frequency of BASS and TREBLE. See the next page for instructions on how to do this.

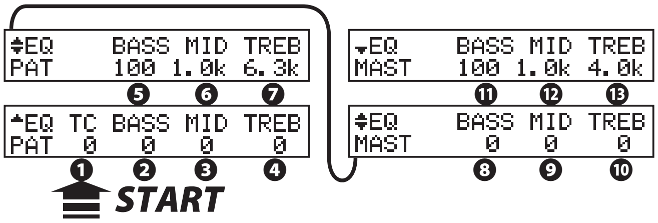
EQUALIZ (Equalizer)

This Edit Menu allows you to adjust the settings for the Equalizer.

An Equalizer is used to adjust the tonal quality. The XK-5's built-in Equalizer consists of 3 bands and a digital implementation of the "tone control " found on the preamp of a tone-wheel Hammond Organ. The Bass and Treble bands are handled by "shelf" equalizers, and the Mid band is handled by parametric control.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲ ▲ ▲
D EQUALIZ ZONES
REVERB MIDI
ENTER


EQ BASS MID TREB
PAT 100 1.0k 6.3k
❺ ❻ ❼
EQ TC BASS MID TREB
PAT 0 0 0 0
❶ ❷ ❸ ❹
START
EQ BASS MID TREB
MAST 100 1.0k 4.0k
⓫ ⓬ ⓭
EQ BASS MID TREB
MAST 0 0 0
❽ ❾ ❿

◆ PATCH EQUALIZER

❶ TONE CONTROL(P)

This parameter duplicates the performance of the tone control on the AO-28 preamp found in the B-3 and C-3. Its response is unique, to cut the overall treble above 200Hz gently.

The setting range is -9 to +3, and it becomes neutral when set at "0." "-1" corresponds to the maximum of the B-3/C-3 tone control, "-5," the middle, "-9," the minimum. The tone control found on the B-3/C-3, was only available at "minus" settings, but here you are able to "plus" the settings as well.

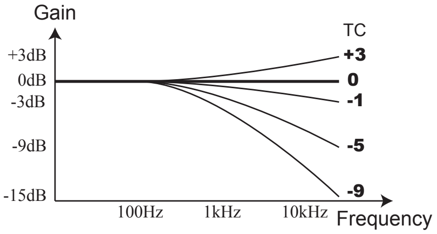


Diagram of Tone Control

◆ PATCH EQUALIZER AND MASTER EQUALIZER

❷, ❽ GAIN - BASS (P), (G)

❸, ❾ GAIN - MIDDLE (P), (G)

❹, ❿ GAIN - TREBLE (P), (G)

These allow you to adjust the Boost/Cut of Bass, Mid-range and Treble respectively.

The setting range is -9 to +9. It is flat At "0,".

❺, ⓫ FREQUENCY - BASS (P), (G)

❻, ⓬ FREQUENCY - MIDDLE (P), (G)

❼, ⓭ FREQUENCY - TREBLE (P), (G)

These allow you to adjust the center frequency (MIDDLE) / turnover frequency (BASS, TREBLE) to be attenuated.

The setting range is 20Hz - 200Hz for BASS, 250Hz - 3.1kHz for MIDDLE, 4.0kHz - 8.0kHz for TREBLE.

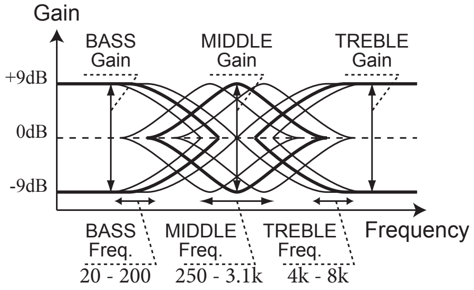

Gain
BASS
Gain
MIDDLE
Gain
TREBLE
Gain
+9dB
0dB
-9dB
BASS
Freq.
20 - 200
MIDDLE
Freq.
250 - 3.1k
TREBLE
Freq.
4k - 8k
Frequency

Diagram of 3-bands Equalizer

NOTE: The sound may distort if gains are raised too high. Adjust accordingly.

NOTE: The parameter indicated by (P) is a Patch Parameter, and can be recorded to each Patch. (G) indicates a Global Parameter, which is recorded upon being set and is common to all Patches. For a complete listing of all Patch and Global Parameters, please consult the APPENDIX at the back of this Guide.

tips **TURNOVER FREQUENCY**

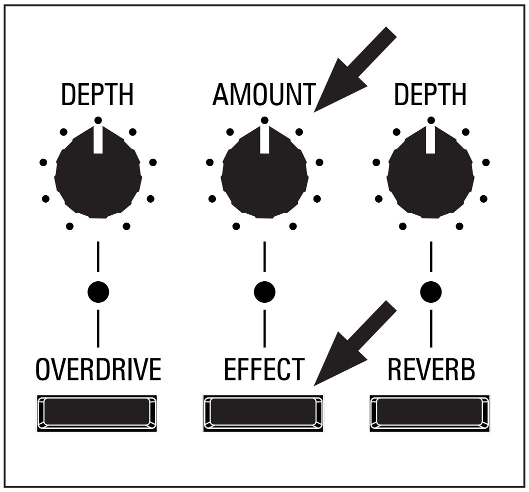
The MIDDLE of this equalizer controls a point of frequency. This is called center frequency. The BASS (or TREBLE) controls lower (or higher) than specified frequency. This is called turnover frequency.

tips **PATCH EQUALIZER**

The Patch Equalizer is designed to be a Patch Parameter which can be saved to a Patch.
Use the Master Equalizer (P. 80) for tonal compensation in live performance.

MULTI EFFECTS

The XK-5 has a number of "Multi Effects" which you can use to enhance the Drawbar and Percussion tones.



◆ MULTI EFFECTS

There are 8 Multi Effects which can be applied to the Drawbar and Percussion tones.

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.

[EFFECT ON] Touch Button

Turns the selected Multi Effect "ON"(LED lit) or "OFF" (LED not lit).

[EFFECT AMOUNT] Rotary Knob

Adjusts the amount of the selected Multi Effect.

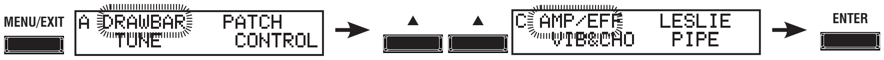
NOTE: Each Multi Effect has numerous parameters which can be adjusted to your preference. The most commonly used parameter will be adjusted by the [EFFECT AMOUNT] Rotary Knob. The other parameters are adjusted in the AMP/EFF Edit Menu, which is described starting on the next page.

Starting on page 84, you will find a complete description of the Multi Effects and the various ways they can be tailored.

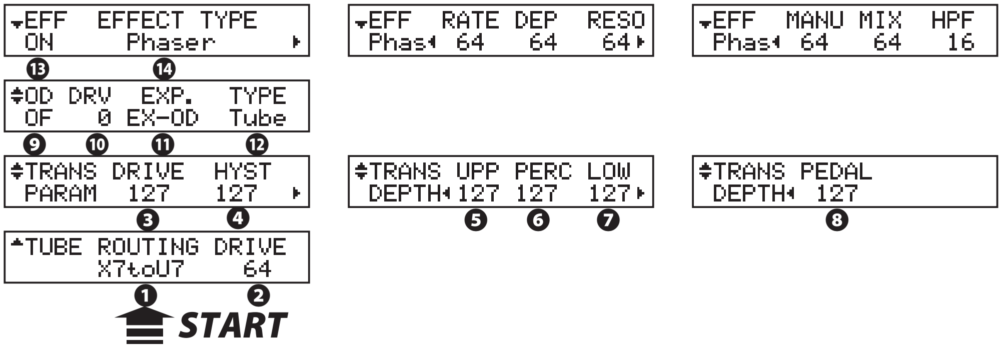
AMP/EFF (Pre-Amplifier / Multi-Effects)

This Edit Menu allows you to adjust the parameters for the Pre-Amplifier and Multi-Effects. "Pre-Amplifier" includes the Overdrive parameters.

To locate this Menu, follow the steps below:



Or, Press and Hold either the [OVERDRIVE] or [EFFECT] Touch Button.


```
▾EFF   EFFECT TYPE
 ON     Phaser     ▸

▾EFF   RATE DEP  RESO
 Phas◂ 64    64   64▸

▾EFF   MANU MIX  HPF
 Phas◂ 64    64   16

⇕OD DRV  EXP.   TYPE
 OF    0 EX-OD  Tube

⇕TRANS DRIVE  HYST
 PARAM  127   127  ▸

⇕TRANS UPP PERC LOW
 DEPTH◂127 127  127▸

⇕TRANS PEDAL
 DEPTH◂ 127

▴TUBE ROUTING DRIVE
       X7toU7    64
```

◆ TUBE PRE-AMPLIFIER

❶ TUBE - ROUTING

This allows you to select the route of the Tube Preamp signals.

Value	Pre Expression Tube	Post Expression Tube
X7toU7	12AX7	12AU7
U7toX7	12AU7	12AX7
U7toU7	12AU7	12AU7
X7toX7	12AX7	12AX7
BYPASS	None	None

❷ TUBE - DRIVE

This allows you to control the Drive amount (non-linear distortion) of the Tube Preamp.

NOTE: This parameter is disabled when the Tube Routing ❶ is set at "BYPASS."

◆ MATCHING TRANSFORMER

❸ TRANS - DRIVE

This allows you to set the saturation level of the Matching Transformer.

The setting range is "0" -"127." A higher value will result in more saturation at low volume levels.

❹ TRANS - HYSTERESIS

This allows you to set the strength of the hysteresis characteristics.

The setting range is "0" - "127", The higher the value, the more "asymmetrical" the sound.

❺❻❼❽ TRANS - DEPTH; UPPER, PERCUSSION, LOWER, PEDAL

This allows you to set the amount of the MT modeling for each Manual.

The setting range is "0" - "127," The higher the value, the deeper the effect.

◆ OVERDRIVE

❾ OVERDRIVE - SWITCH

This allows you to turn the Overdrive effect "ON" or "OFF."

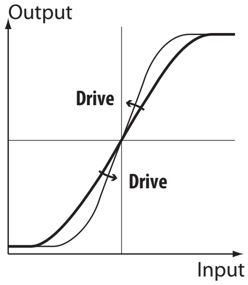
❿ OVERDRIVE - DRIVE

This allows you to adjust the overall amount of Overdrive. The higher the value, the more distortion will be heard. It is linked with the [OVERDRIVE AMOUNT] Rotary Knob on the top panel.

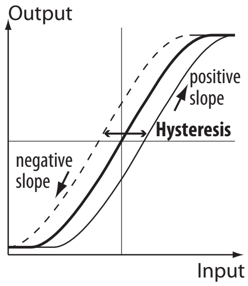
tips **TRANSFORMER MODELING**

The purpose of the Matching Transformer in a Hammond tone-wheel organ is to "match" the low Impedance of the generator and key circuits to the high impedance amplifier input. It combines the individual tones from each Drawbar into one complex musical tone.

Doing this imparts some unique characteristics to the sound (se the diagrams below), which are part of the tonal characteristics of a Hammond tone-wheel organ such as the B-3.

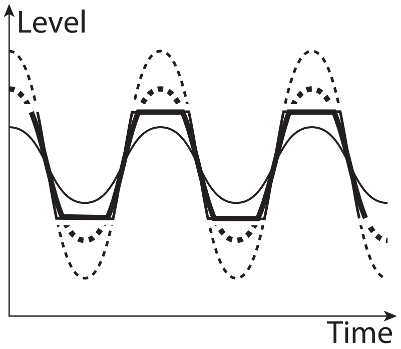


How the Trans - Drive works



How the Trans - Hysteresis works

⑪ OVERDRIVE - EXPRESSION



This allows you to set the response of Overdrive to an Expression Pedal.

EX-OD:	Overdrive effect increases/decreases along with Volume.
OD-EX:	Overdrive effect remains constant, Expression Pedal increases/decreases Volume.
OD ONLY:	Volume remains constant, Expression Pedal increases/decreases the amount of Overdrive.
INPUT:	Expression Pedal attenuates INPUT level to Overdrive effect. Lesser Volume control.

⑫ OVERDRIVE - TYPE

This allows you to set the characteristic of the Overdrive.

Tube:	Replicates a tube-driven amp.
Solid:	Replicates a solid-state stomp box.
Clip:	Accurate hard clip.
EPAmp:	Replicates the pre-amplifier of an electric piano.

◆ MULTI EFFECTS

⑬ EFFECT - SWITCH

This allows you to turn the selected Multi Effect "ON" or "OFF."

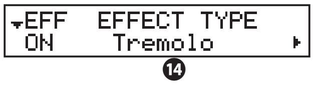
⑭ EFFECT - TYPE

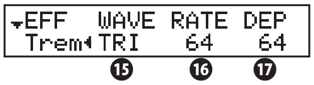
This allows you to select the Multi Effect Type.

Following is a description of each of the available Multi Effects.

<u>Tremolo</u>

"Tremolo" raises and lowers the amplitude or volume at a determined rate.


```
▾EFF  EFFECT TYPE
 ON    Tremolo     ▸
```


```
▾EFF  WAVE RATE DEP
 Trem◂TRI   64   64
```

⑮ TREMOLO - WAVEFORM

This allows you to set which waveform is used to modulate the volume.

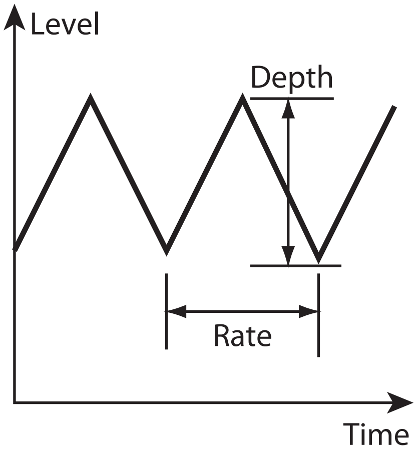
Tri:	Triangle wave. The volume changes smoothly.
Sqr:	Square wave. The volume suddenly rises and falls.
Saw:	Sawtooth wave. Repeated decaying sound is obtained.
S&H:	Sample & hold. The volume changes randomly.
DSqr:	Dull square wave like the old electric piano effect.

⑯ TREMOLO - RATE

This allows you to adjust the speed of the tremolo cycle.

The setting range is "0" to "127." The higher the value, the faster the cycle.

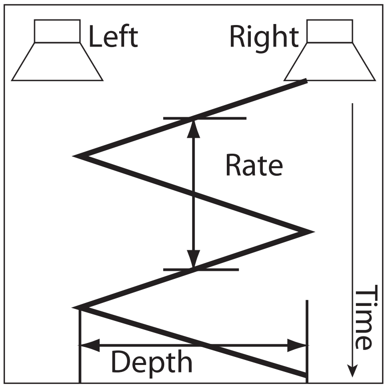
⑰ TREMOLO - DEPTH



This allows you to adjust the depth of the tremolo effect.

The setting range is "0" to "127." At "0," the volume does not modulate. The higher the value, the deeper the effect. At "127," a repeated no sound/maximum volume is obtained.

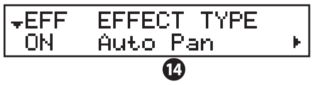
NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.



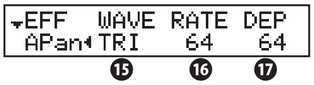
Auto Pan

"Auto Pan" smoothly shifts the sound back and forth between Left and Right channels.

NOTE: This Multi-Effect requires that both Left and Right channels be connected via the LINE OUT jacks.



```
▾EFF  EFFECT TYPE
 ON   Auto Pan     ▸
```



```
▾EFF  WAVE RATE DEP
 APan◂TRI   64   64
```

⑮ AUTO PAN - WAVEFORM

This allows you to set which waveform to modulate the direction.

Tri: Triangle wave. The direction smoothly changes.
Sqr: Square wave. The direction suddenly moves to the left, and suddenly moves to the right.
Saw: Sawtooth waveform. The direction repeatedly moves from left to right.
S&H: Sample & hold. The direction changes randomly.
DSqr: Dull square wave like the old electric piano effect (recommended).

⑯ AUTO PAN - RATE

This allows you to adjust the speed of the modulation.

The setting range is "0" to "127." The higher the value, the faster the modulation.

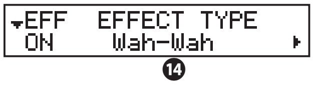
⑰ AUTO PAN DEPTH

This allows you to adjust the depth of the cycle.

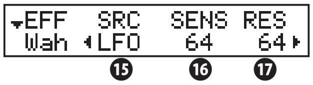
The setting range is "0" to "127." At "0," there is no direction modulation. The higher the value, the deeper the effect becomes. At "127," you can give a perfect left/right repetition.

Wah-Wah

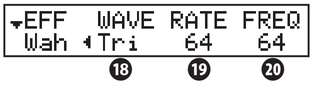
"Wah-Wah" is a periodic emphasis and de-emphasis of upper frequencies by means of a frequency filter to impart a speech-like quality to the sound.



```
▾EFF  EFFECT TYPE
 ON    Wah-Wah     ▸
```



```
▾EFF  SRC  SENS RES
 Wah ◂LFO   64   64▸
```



```
▾EFF  WAVE RATE FREQ
 Wah ◂Tri   64   64
```

⑮ WAH-WAH - SOURCE

This allows you to select the source of the Wah-Wah control.

EXP: Uses the Expression Pedal like a "Wah Wah pedal."
LFO: Auto-Wah using the built-in 'LFO" (Low Frequency Oscillator).

⑯ WAH-WAH - SENSITIVITY

This allows you to set the sensitivity to change the Wah effect of LFO or Expression Pedal.

The setting range is "0" to "127." The dynamic response increases as the value rises.

⑰ WAH-WAH - RESONANCE

This allows you to boost the cut-off frequency range of the Low-pass Filter and gives a more pronounced "Wah" effect.

The setting range is "0" to "127." The resonance increases as the value rises.

⑱ WAH-WAH - WAVEFORM

When the SOURCE ⑮ is set at "LFO," the LFO wave form is set.

Tri: Triangle wave. The sound smoothly varies.
Sqr: Square wave. The filter suddenly opens and suddenly closes.
Saw: Sawtooth wave. Repeated smooth cyclical changes in the sound.
S&H: Sample & Hold. Random changes to the sound.

⑲ WAH-WAH - RATE

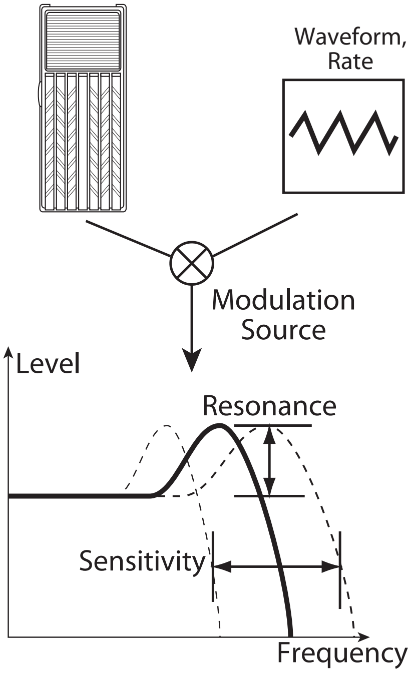
When the SOURCE ⑮ is set at "LFO," the cycle rate is adjusted.

The setting range is "0" to "127." The rate becomes faster as the value increases.

⑳ WAH-WAH - FREQUENCY

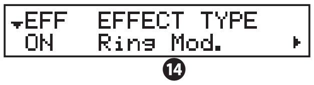
This allows you to adjust the central frequency.

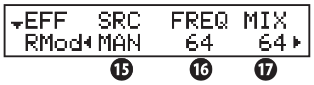
The setting range is "0" to "127." The frequency becomes higher as the value is increased.

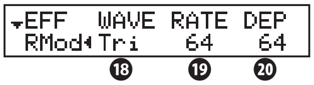


Ring Mod.

“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.”


```
▾EFF  EFFECT TYPE
 ON   Ring Mod.     ▸
```

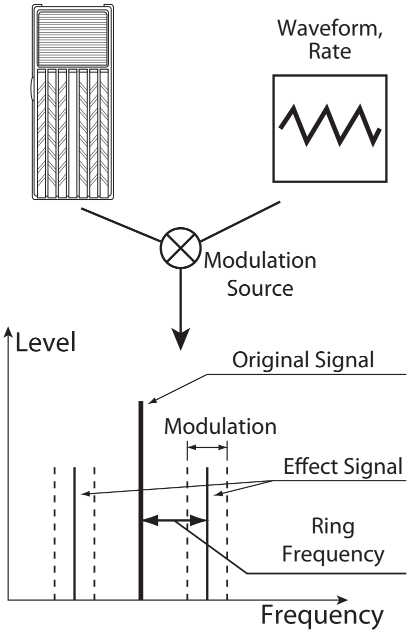

```
▾EFF  SRC  FREQ MIX
 RMod◂MAN   64   64▸
```


```
▾EFF  WAVE RATE DEP
 RMod◂Tri   64   64
```

⑮ RING MODULATOR - SOURCE

This allows you to select what to use to modulate the ring frequency.

EXP:	Modulates the ring frequency with the Expression Pedal.
LFO:	Allows a cyclical modulation effect using the built-in LFO-Low Frequency Oscillator.
NOTE:	The ring frequency changes by the note, i. d. the UPPER Part performance.



⑯ RING MODULATOR - FREQUENCY

This allows you to adjust the central ring frequency.

The setting range is “0” to “127.” The frequency becomes higher as the value increases.

⑰ RING MODULATOR - MIX

This allows you to adjust the volume balance between the fundamental and effect sounds.

The setting range is “0” to “127.” At “0,” only the fundamental sound is heard. As the value is raised, the more effect is added. At “127,” only the effect comes out.

⑱ RING MODULATOR - WAVEFORM

When the SOURCE ⑮ is set at LFO, the LFO waveform is set.

Tri:	Triangle wave. The ring frequency number smoothly varies.
Sqr:	Square wave. The ring sound suddenly changes to treble and also suddenly to bass.
Saw:	Sawtooth wave. The ring sound repeatedly drops from treble to bass.
S&H:	Sample & hold wave. The ring frequency changes randomly.

⑲ RING MODULATOR - RATE

When the SOURCE ⑮ is set at LFO, the frequency speed is adjusted.

The setting range is “0” to “127.” The cycle becomes faster as the value is raised.

⑳ RING MODULATOR - DEPTH

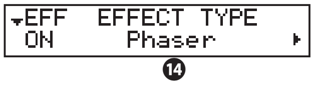
This allows you to adjust the depth of the frequency change when the source is set at LFO or EXP.

The setting range is “0” to “127.” The ring frequency becomes wider as the value is raised.

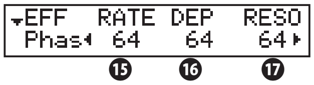
NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

Phaser

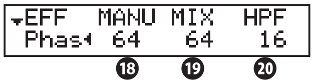
“Phaser” will create the effect of splitting an audio signal into two paths and varying their phase relationship to each other, resulting in an alternately hollow and full-bodied sound. It can be described as a “swooshing” or “twisting” effect.



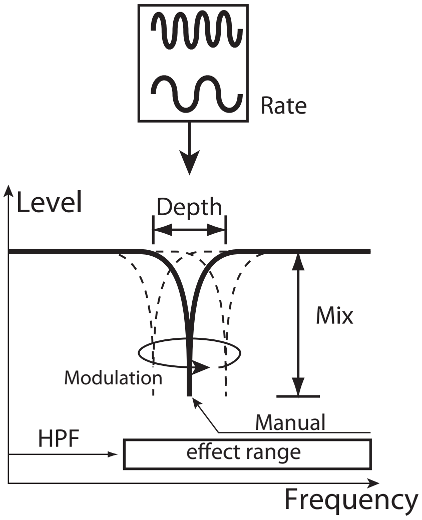
```
▾EFF  EFFECT TYPE
 ON     Phaser     ▸
```



```
▾EFF  RATE DEP  RESO
 Phas◂ 64   64   64▸
```



```
▾EFF  MANU MIX  HPF
 Phas◂ 64   64   16
```



⑮ PHASER - RATE

This allows you to adjust the frequency speed.

The setting range is “0” to “127.” The cycle becomes faster as the value increases.

⑯ PHASER - DEPTH

This allows you to adjust the depth of modulation.

The setting range is “0” to “127.” The modulation becomes deeper as the value increases.

⑰ PHASER - RESONANCE

This allows you to adjust the resonance (feed-back) amount.

The setting range is “0” to “127.” The resonance becomes greater as the value increases. At higher values, the sound is modulated beyond normal recognition.

⑱ PHASER - MANUAL

This allows you to set the middle frequency of the phase effect.

The setting range is “0” to “127.” The frequency becomes higher as the value increases.

⑲ PHASER - MIX

This allows you to adjust the volume balance between the “dry” and the effect sound.

The setting range is “0” to “127.” At “0,” only “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.

⑳ PHASER - HPF

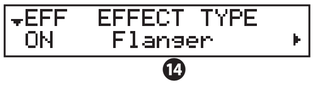
This allows you to control the frequency range of the effect.

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.

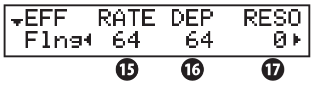
Flanger

"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.

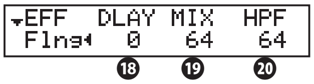
The term, "Flanger" derives from the means originally used to produce this effect. Two tape machines running at exactly the same speed would play the same material into a third machine, and an engineer would drag his finger along the "flange" or outer edge of the tape reel on one of the machines, thereby causing the small time delay and creating the sweeping effect.



```
▾EFF  EFFECT TYPE
 ON    Flanger     ▸
```



```
▾EFF  RATE DEP  RESO
 Flng◂ 64   64    0▸
```



```
▾EFF  DLAY MIX  HPF
 Flng◂  0   64   64
```

⑮ FLANGER - RATE

This allows you to adjust the modulation speed.

The setting range is "0" to "127." The cycle becomes faster as the value increases.

⑯ FLANGER - DEPTH

This allows you to adjust the depth of modulation.

The setting range is "0" to "127." The modulation becomes deeper as the value increases.

⑰ FLANGER - RESONANCE

This allows you to adjust the amount of resonance (feed-back).

The setting range is "0" to "127." The resonance becomes greater as the value increases. At higher values, the sound is modulated beyond normal recognition.

⑱ FLANGER - DELAY

This allows you to control the delay of the effect sound.

The setting range is "0" to "127." The delay increases as the value is increased.

⑲ FLANGER - MIX

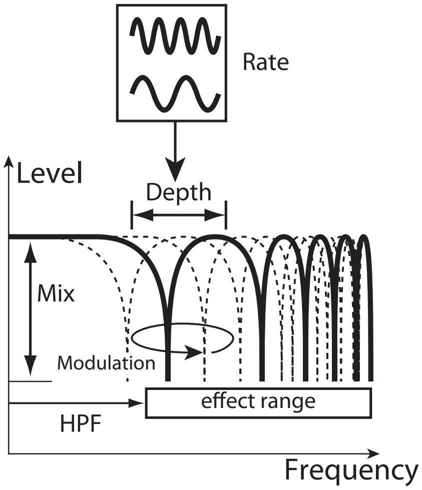
This allows you to adjust the volume balance between the "dry" and the effect sound.

The setting range is "0" to "127." At "0," only the "dry" is heard. The effect level becomes greater as the value is increased. At "127," the ratio between the "dry" and the effect sounds becomes 1:1.

⑳ FLANGER - HPF

This allows you to control 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.

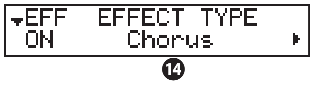


NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

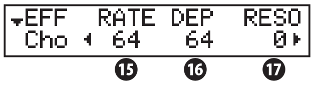
Chorus

“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.

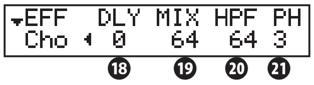
NOTE: Do not confuse this Chorus with the Hammond Vibrato/Chorus effect. The Chorus Multi-Effect, as mentioned, is non-periodic or “random” sounding. With the Vibrato Chorus, a “cycle” is clearly audible. The parameters described below DO NOT affect the Vibrato Chorus.



```
▾EFF  EFFECT TYPE
 ON     Chorus    ▸
```



```
▾EFF  RATE DEP  RESO
 Cho ◂ 64   64    0▸
```



```
▾EFF  DLY MIX HPF PH
 Cho ◂ 0   64  64 3
```

⑮ CHORUS - RATE

This allows you to adjust the speed of the cycle of the rising and falling effect pitch.

The setting rate is 0 to 127. The cycle becomes faster as the value increases.

⑯ CHORUS - DEPTH

This allows you to adjust the depth of modulation.

The setting range is “0” to “127.” The modulation becomes deeper as the value increases.

⑰ CHORUS - RESONANCE

This allows you to adjust the amount of resonance (feed-back).

The setting range is “0” to “127.” The resonance becomes greater as the value increases. At higher values, the sound is modulated beyond normal recognition.

⑱ CHORUS - DELAY

This 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.

⑲ CHORUS - MIX

This 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.

⑳ CHORUS - HPF

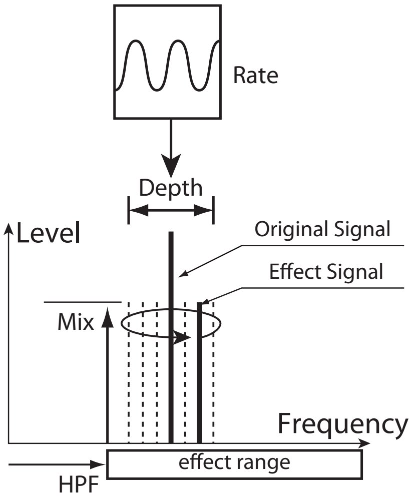
This allows you to control the frequency range of the effect.

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.

㉑ CHORUS - PHASE

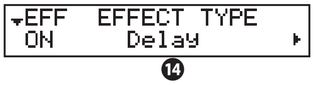
This allows you to select the type of the chorus effect available:

“2” (normal) or “3” (rich) phase effect type.

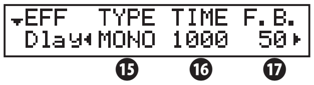


Delay

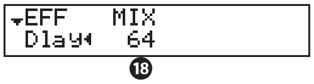
“Delay” adds echo effects.



```
▾EFF  EFFECT TYPE
 ON     Delay      ▸
```



```
▾EFF  TYPE TIME F.B.
 Dlay◂MONO 1000  50▸
```



```
▾EFF   MIX
 Dlay◂  64
```

⑮ DELAY - TYPE

Select the type of delay here.

MONO:

A simply monophonic “echo.”

RtoL, LtoR:

The delay is alternated in the stereo field. At RtoL the delayed sound comes from the right, and at LtoR from the left. Your results may vary when used in a mono hookup, or through a Leslie Speaker.

⑯ DELAY - TIME

This allows you to adjust the delay time.

The setting range is 10 to 1000 ms.

⑰ DELAY - FEED-BACK

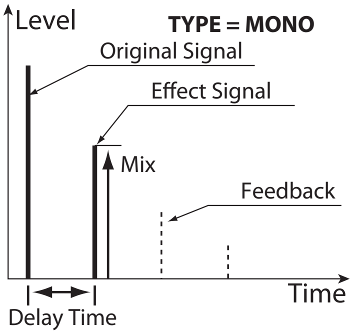
This allows you to set the repetition amount of the effect sound.

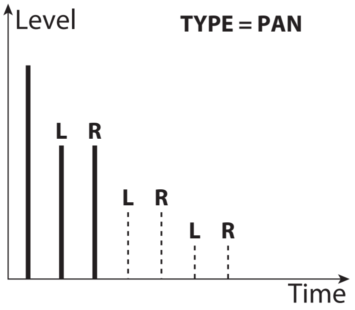
The setting range is “0” to “127.” The repetition becomes greater as the value is increased.

⑱ DELAY - MIX

This 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 is increased. At 64 the ratio between the “dry” and the effect sounds becomes 1:1. At “127,” only the effect sound is heard.



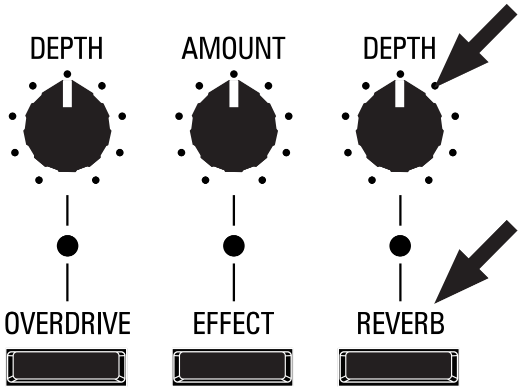


NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

REVERB

REVERB (or Reverberation) is the prolongation or persistence of sound caused by sound bouncing or reflecting off of hard surfaces such as floors, walls or ceilings. It is measurable by the interval of time required for the sound to decay to inaudibility after the source of the sound has been stopped.

The XK-5 has built-in Digital Reverb which allows you to simulate several different acoustic profiles representing different sizes and types of enclosures. This is explained in detail starting on the next page.



[REVERB ON] Touch Button

Turns the Reverb effect “ON”(LED lit) and “OFF.”

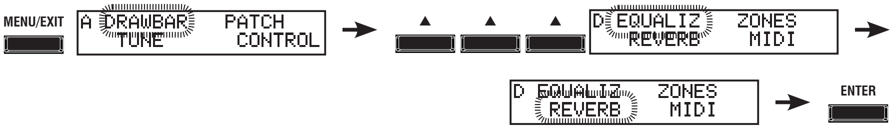
[REVERB DEPTH] Rotary Knob

Adjusts the amount of the selected Reverb Type.

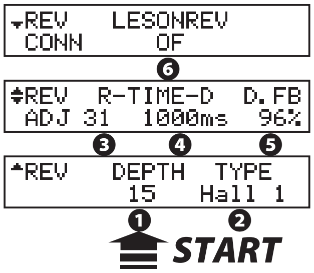
REVERB Edit Menu

This Edit Menu allows you to make changes to the Reverb.

To locate this Menu, follow the setps below:



Or, Press and Hold the [REVERB] Touch Button.


REV LESONREV
CONN OF

REV R-TIME-D D.FB
ADJ 31 1000ms 96%

REV DEPTH TYPE
15 Hall 1

❶ DEPTH

This allows you to control the overall amount of the Reverb Effect.

The setting range is “0” to “127.”

❷ TYPE

This allows you to select the type of Reverb.

Room 1:	Small room
Room 2:	Large room
Live:	Ambient room
Hall 1:	Large Hall
Hall 2:	Small Hall
Church:	Church
Plate:	Iron-plate Reverb
Spring:	Spring Reverb
Delay:	Delay
PanDly:	Panning Delay
RevDly:	Reverb + Delay

❸ REVERB TIME

This allows you to control the length of the Reverb for Reverb Types “Room 1” through “Spring.”

The setting range is “0” to “127.” The decay becomes greater as the value is increased.

❹ DELAY TIME

This allows you to control the delay time for Reverb Types “Delay,” “PanDly” and “RevDly..”

The setting range is 4.7 to 2000ms. The delay becomes longer as the number value is increased.

NOTE: You can program the Foot Switch to set the delay time. (P. 122 #1)

❺ DELAY FEEDBACK

This allows you to control the number of repetitions for Reverb Types “Delay,” “PanDly” and “RevDly.”

The setting range is 0 to 96%. The repetition becomes greater as the value is increased.

NOTE: Type (#2) is a macro-parameter. When the Reverb Type is changed, each Reverb Parameter (#3 to #5) is automatically set to the recommended value.

❻ LESLIE ON REVERB

Turns the Reverb effect for the Leslie “ON” (LED lit) or “OFF” (LED not lit).

OFF:	Leslie to Reverb
ON:	Reverb to Leslie

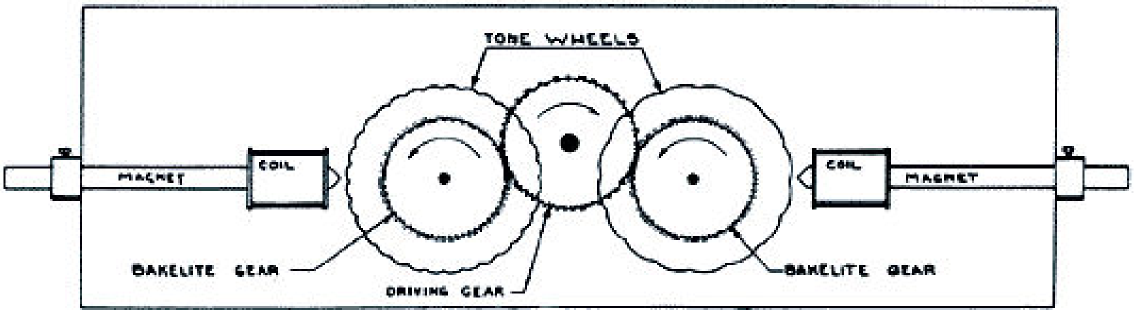
NOTE: All the parameters described on these pages are Patch Parameters and can be stored to individual Patches. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

CUSTOM TONE WHEELS

CUSTOM TONE WHEELS

◆ WHAT ARE "TONE WHEELS?"

Tone Wheels (or "phonic wheels") are the method by which tone-wheel Hammond Organs generate tone. Each individual frequency is generated by a steel disk 1 7/8" in diameter and containing a number of high and low points called teeth on its outer edge. (See the illustration below.) These disks are the Tone Wheels. 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 mechanical 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 teeth pass the magnet each second, the result will be 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.

◆ WHAT ARE "CUSTOM TONE WHEELS?"

As stated on page 52, the first four Drawbar Voice Modes - "B-3," "C-3," "A-100" and "Mellow" - are designed to reproduce the sound of tone-wheel Hammond Organs. Within each of these four Voice Modes are four different settings designed to reproduce specific characteristics of vintage Hammond Organs.

During the time the tone-wheel 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.

The XK-5 has 6 different Custom Tone Wheel settings. Three (3) of these are User settings (indicated by a "U") while the other three (3) are Factory Custom Tone Wheels (indicated by an "F"). The Factory Custom Tone Wheels are permanently written in memory, but the User Custom Tone Wheels can be overwritten with your own settings. You can even re-name them if you wish.

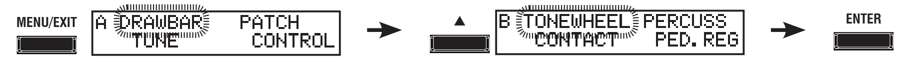
The first two pages of the TONEWHEEL Edit Menu allow you to select the Custom Tone Wheel you wish to use or modify, as well as name a Custom Tone Wheel you have created. The remaining pages allow you to modify the specific characteristics of the selected Custom Tone Wheel. After you have made all of your changes, you can save them as your own Custom Tone Wheel. Please consult pages 90 through 93 for more information about creating, saving and naming your own Custom Tone Wheels. Also consult the APPENDIX at the back of this Guide for a list of the preset Custom Tone Wheels.

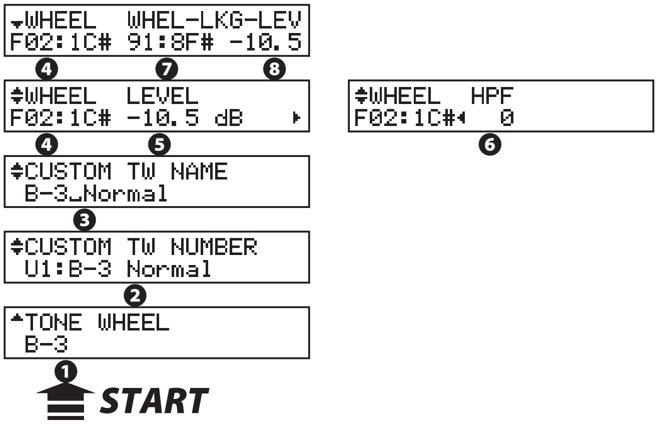
SPECIAL NOTE: The Drawbar Voice Type designations "B-3," "C-3" and "A-100" refer to specific organ units which are identified by their serial numbers. Contrary to popular myth, there is NO inherent difference between a B-3 and a C-3 - they were manufactured to the identical specification except for the 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.

CUST. TW Edit Menu

This Edit Menu allows you to select from among a library of different Tone Wheel settings as well as create your own Custom Tone Wheels.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲
B TONEWHEEL PERCUSS
CONTACT PED. REG
ENTER


WHEEL WHEL-LKG-LEV
F02:1C# 91:8F# -10.5
❹ ❼ ❽
WHEEL LEVEL
F02:1C# -10.5 dB
❹ ❺
WHEEL HPF
F02:1C# 0
❻
CUSTOM TW NAME
B-3_Normal
❸
CUSTOM TW NUMBER
U1:B-3 Normal
❷
TONE WHEEL
B-3
❶
START

❶ ORGAN TYPE

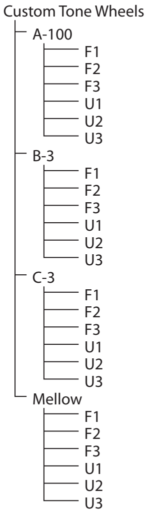
This allows you to select the organ type to edit: "A-100," "B-3," "C-3" and "Mellow."

❷ CUSTOM NUMBER (P)

This allows you to select the "CUSTOM NUMBER" to use or compile. The setting range is F1 to F3 (not re-writable) and U1 to U3 (re-writable). See right tree for detail.

The symbol "*" will be displayed when the virtual Tone Wheel parameters are edited (shown below ❸ to ❼).

NOTE: This parameter is a Patch Parameter and is recorded as part of a Patch.


Custom Tone Wheels
A-100
F1
F2
F3
U1
U2
U3
B-3
F1
F2
F3
U1
U2
U3
C-3
F1
F2
F3
U1
U2
U3
Mellow
F1
F2
F3
U1
U2
U3

◆ CUSTOM TONE WHEEL PARAMETERS

NOTE: None of these parameter settings will be remembered unless they are saved as a Custom Tone Wheel.

❸ CUSTOM NAME (TW)

This allows you to enter name the Custom Tone Wheels set using up to 10 letters.

Use the [◀][▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters.

NOTE: See page 99 for detailed instructions on naming Custom Tone Wheels.

❹ WHEEL NUMBER (TW)

This allows you to select the number of the Tone Wheel you want to regulate.

The setting range is displayed by "wheel# : note" style,

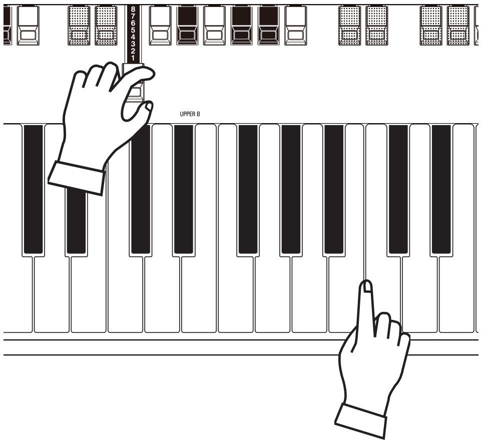
01: 0C to 12: 0B,
F01: 0C to F12: 0B,
13: 1C to 91: 8F# and
F92: 8G to F96: 8B.

"F" means the wheel used for extended fold-back. The non-marked Wheel Number means original wheel from B-3/C-3.

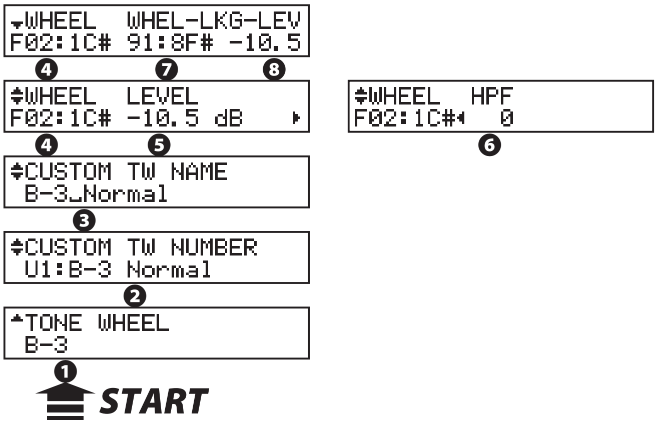
To select the Wheel Number, select the [VALUE] Rotary Knob here, or slightly move the footage of the Drawbar while depressing the key you want to regulate (see the illustration on the right).

When the Wheel Number is selected, each parameter for the wheel (❺, ❻, ❼) is updated.

NOTE: Set the [TRANSPOSE] and [OCTAVE] at "0" to select a correct wheel.



How to select the WHEEL NUMBER to edit


WHEEL WHEL-LKG-LEV
F02:1C# 91:8F# -10.5
❹ ❼ ❽
WHEEL LEVEL
F02:1C# -10.5 dB
❹ ❺
WHEEL HPF
F02:1C# 0
❻
CUSTOM TW NAME
B-3 Normal
❸
CUSTOM TW NUMBER
U1:B-3 Normal
❷
TONE WHEEL
B-3
❶
START

❺ LEVEL (TW)

This allows you to set the volume of the selected Wheel.

The setting range is "-INF" (OFF), "-73" (soft) to "+4" (loud) dB.

❻ CUT OFF FREQUENCY - HPF (TW)

This allows you to set the frequency to cut the bass of the wheel.

If you decrease the value, a "motor hum" is heard besides the original virtual Tone Wheel sound.

The setting range is "0" to "127."

❼ LEAKAGE WHEEL NUMBER (TW)

This allows you to add a Leakage Tone to any of the Wheels from "01:0C" to "72:6B" ("Fundamental Wheels") by using the "Leakage Wheels" ("61:6C" through "91:8F♯ - see the diagram on the right).

The selected Leakage Wheel will sound in conjunction with the Fundamental Wheel.

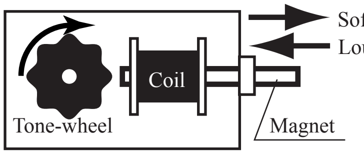
To select the Leakage Wheel, use the [VALUE] Rotary Knob or move the desired Drawbar while holding down the key which represents the pitch you want to edit.

❽ LEAKAGE WHEEL LEVEL (TW)

This allows you to adjust the volume of the selected Leakage Wheel.

The setting range is "-INF" (OFF), "-73" (soft) to "+4" (loud) dB.

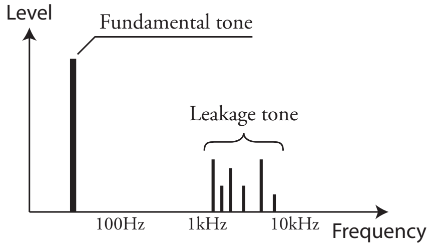
NOTE: The parameters described on pages 90 and 91 can be saved as a Custom Tone Wheel which can then be saved to a Patch. See page 98 for instructions on how to do this.


Soft
Loud
Coil
Tone-wheel
Magnet

Level Adjustment

tips DECIBEL (dB)

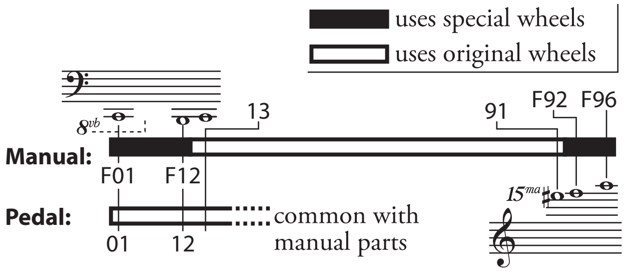
A "decibel" (abbreviated "db") is a unit for measuring the level of audio waves. If the volume of a sound is increased by "+6dB," it is approximately twice its previous level.



Leakage Tone

tips "F" WHEEL NUMBERS

During the time when tone-wheel organs were manufactured, several different schemes were used. The most common one is the one used in the B-3, C-3, etc., which uses twelve specially-shaped tone wheels for the bottom 12 notes of the pedals. These tone wheels are used to furnish depth and richness to the deep bass notes and are NOT playable from either Manual. These Complex Tone Wheels are provided for in the XK-5 and are designated by the letter "F." Therefore, when you see "F01" through "F12" in the Menu page for adjusting the sound of individual Tone Wheels in the TONEWHEEL Edit Menu, these are the Complex Tone Wheels used for the bottom twelve Pedal tones. (See the diagram below.)

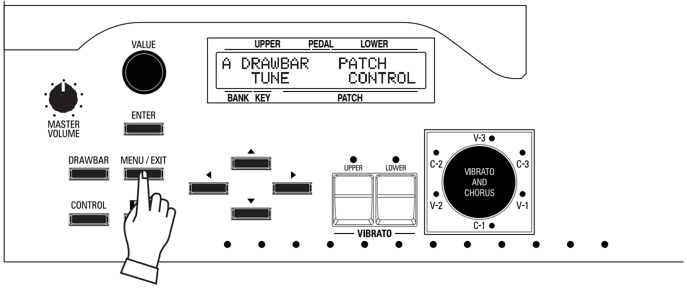

uses special wheels
uses original wheels
8vb
13
91
F92
F96
Manual:
F01
F12
15ma
Pedal:
01
12
common with manual parts

Tone Wheels used for Manual and Pedal tones

CREATING AND RECORDING A CUSTOM TONE WHEEL

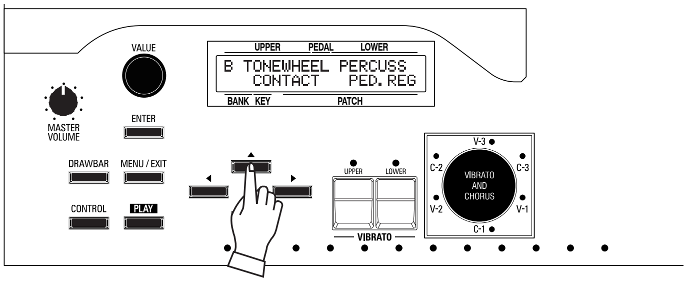
The arameters described on the previous pages can be saved as Custom Tone Wheel. To save a Custom Tone Wheel, do the following:

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS
VIBRATO

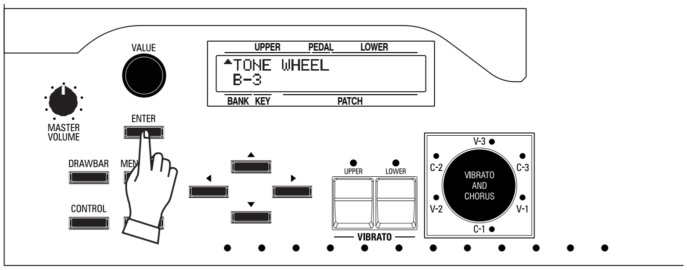
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


VALUE
UPPER PEDAL LOWER
B TONEWHEEL PERCUSS
CONTACT PED.REG
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

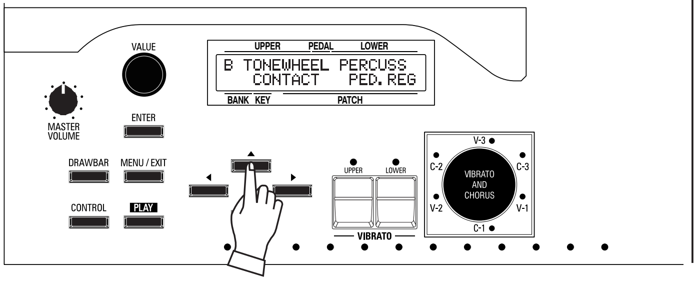
Press the [▲] Touch Button once to display the B Menu.

3 GO TO TONEWHEEL FUNCTION MODE


VALUE
UPPER PEDAL LOWER
▲TONE WHEEL
B-3
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
VIBRATO AND CHORUS
VIBRATO

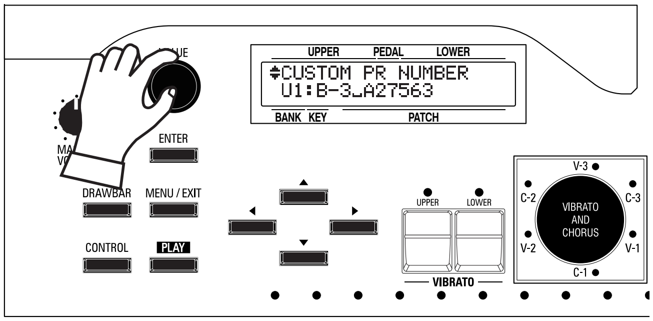
Press [ENTER] to enter TONEWHEEL FUNCTION Mode.

4


VALUE
UPPER PEDAL LOWER
B TONEWHEEL PERCUSS
CONTACT PED.REG
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

Press the [▲] Touch Button once. "B" will show in the upper left corner of the display.

5

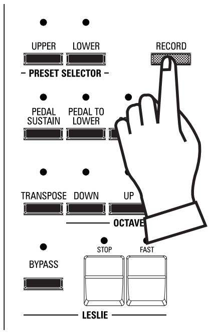

UPPER PEDAL LOWER
♦CUSTOM PR NUMBER
U1:B-3_A27563
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

Use the [VALUE] Rotary Knob to select the Custom Tone Wheel you wish to edit.

6

Make whatever changes you wish to the Custom Tone Wheel you have selected.

7

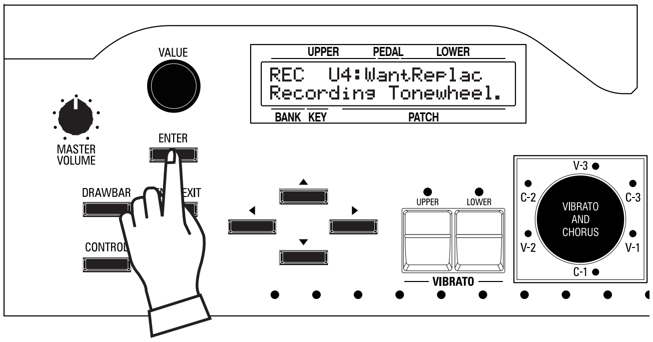

UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished editing your Custom Tone Wheel, press the [RECORD] Touch Button. The display will show:

"`[ENTER] to Overwrite`"

on the bottom line.

8


VALUE
UPPER PEDAL LOWER
REC U4:WantReplac
Recording Tonewheel.
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
VIBRATO AND CHORUS
VIBRATO

Press [ENTER] to record the Custom Tone Wheel. The display will show, "`Recording Tonewheel...`" for approximately 1 second.

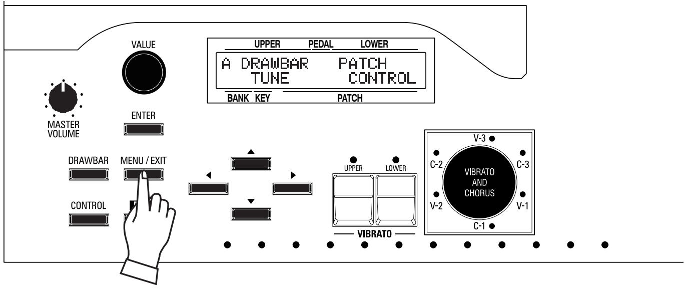
When the message no longer displays, your settings has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Tone Wheel, press the [MENU/EXIT] or [PLAY] Touch Button.

NAMING A CUSTOM TONE WHEEL

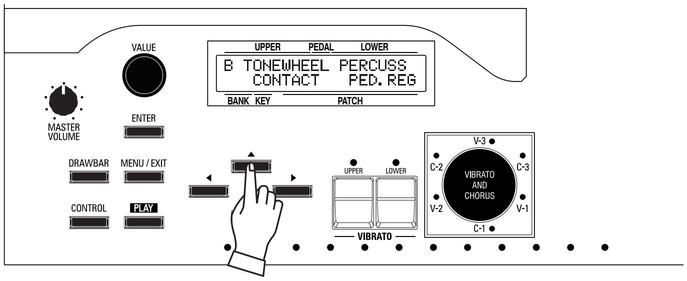
After you have created and saved a Custom Tone Wheel, you may give it a unique name if you wish. To do this:

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

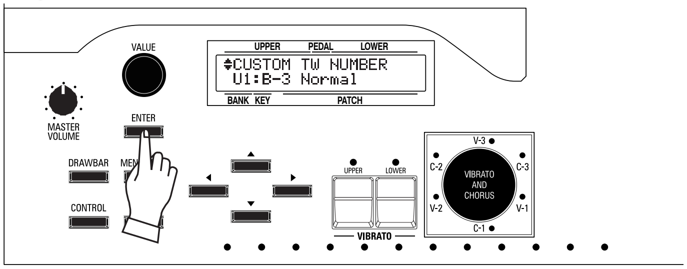
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


VALUE
UPPER PEDAL LOWER
B TONEWHEEL PERCUSS
CONTACT PED.REG
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

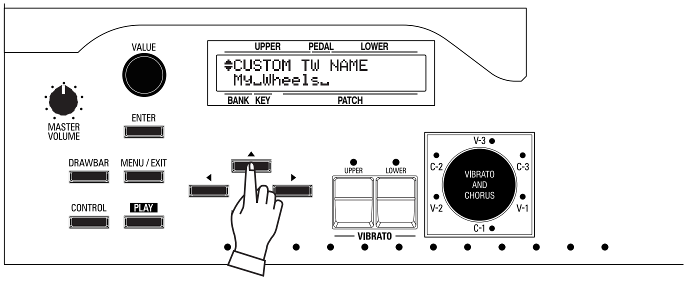
Press the [▲] Touch Button once to display the B Menu.

3 GO TO TONEWHEEL FUNCTION Mode


VALUE
UPPER PEDAL LOWER
♦CUSTOM TW NUMBER
U1:B-3 Normal
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

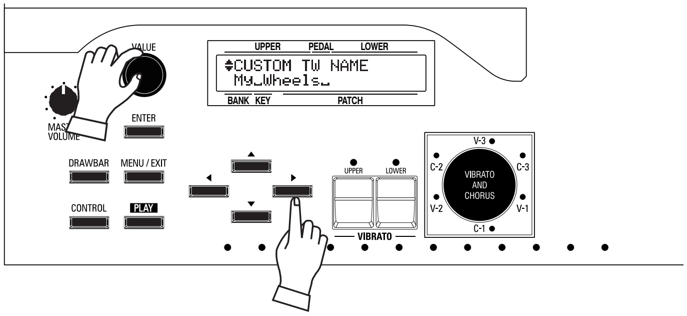
Press [ENTER] to enter TONEWHEEL FUNCTION Mode.

4 SELECT THE TONEWHEEL NAME PAGE


VALUE
UPPER PEDAL LOWER
♦CUSTOM TW NAME
My_Wheels_
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press the [▲] Touch Button to display Page 2 of the TONEWHEEL FUNCTION Mode.

5 INPUT THE NAME

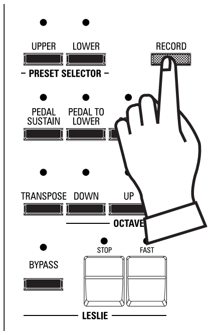

VALUE
UPPER PEDAL LOWER
♦CUSTOM TW NAME
My_Wheels_
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons:	Moves the cursor.
[VALUE] Rotary Knob:	Selects letters.

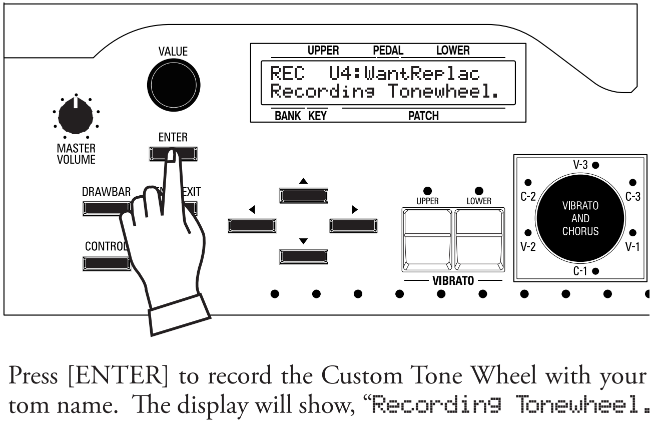
The available characters include: Punctuation Marks (space - . ‘ &), Numeric Characters (0 ~ 9), Upper-case Letters (“A ~ Z”), and Lower-case Letters (“a ~ z”).

6


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished naming your Custom Tone Wheel, press the [RECORD] Touch Button. The display will show: “`[ENTER] to Overwrite`” on the bottom line.

7


VALUE
UPPER PEDAL LOWER
REC U4:WantReplac
Recording Tonewheel.
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Press [ENTER] to record the Custom Tone Wheel with your custom name. The display will show, “`Recording Tonewheel...`” for approximately 1 second.

When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Contact, press the [MENU/EXIT] or [PLAY] Touch Button.

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VIRTUAL MULTI-CONTACTS

CONTACTS OF A TONE-WHEEL ORGAN & VIRTUAL MULTI-CONTACTS

◆ CONTACTS OF A TONE-WHEEL ORGAN

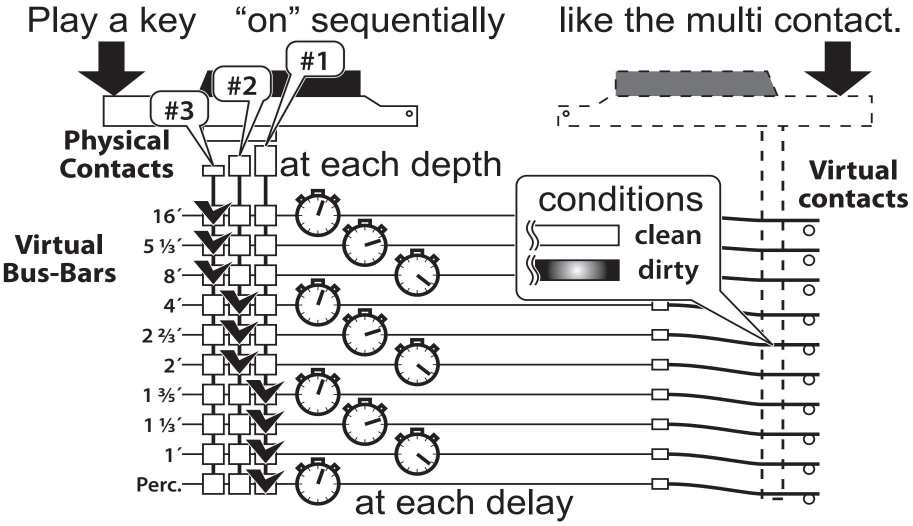
As explained on page 94, the basis for the "Hammond Sound" is the tone- or phonic-wheel generator.

When a key is pressed on a tone-wheel Hammond Organ, it closes 9 small electrical switch contacts. These 9 contacts represent the 9 pitches provided by the Drawbars - the fundamental tone plus eight harmonics. The contacts are closed and opened by means of 9 horizontal flat springs which touch 9 busbars. When a flat spring touches a busbar, electrical contact is made and the harmonic is permitted to sound. Since the 9 busbars are physically separated, the harmonics do not all sound simultaneously, but in succession. This can be heard most clearly by selecting one of the four Manual Drawbar sets of a tone-wheel organ (for example, Upper Manual "B"), pulling all of the Drawbars in the selected set out to their maximum volume setting and slowly pressing a playing key. Each of the harmonics will add in a sequence from highest to lowest until all 9 frequencies will be heard when the key is at the bottom of its travel. The "Key-Click" on tone-wheel Hammond Organs is due to these physical characteristics.

◆ VIRTUAL MULTI-CONTACTS

The XK-5 utilizes a new specially-designed "VIRTUAL MULTI-CONTACT" system which reproduces the effect of 9 contacts per note.

The XK-5 manual has three (3) physical contacts of three (3) different depths under each playing key. The effect of 9 physical contacts is created by software. See the diagram below for a visual representation of how this works. The XK-5 Virtual Multi-Contacts are shown on the left while the 9-contact system of a tone-wheel organ is shown on the right.



You can set the following conditions of the contact springs and the busbars with each footage of each key:

- The conditions of the bounce
- The depth of contact
- The length of delay

This is explained more fully on the next page.

◆ WHAT IS A "CUSTOM CONTACT?"

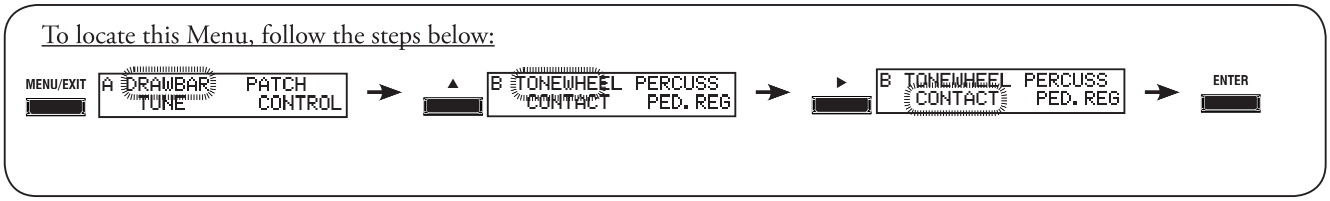
On a tone-wheel Hammond Organ, the 9 switches close in the same order. This is due to the physical placement of the busbars for each harmonic under the playing keys. However, you can customize the Virtual Multi-Contacts so that they close in any order you wish - from top to bottom, from bottom to top, all at once, etc. - And save your changes as a **Custom Contact**.

The XK-5 has 6 different Custom Contact settings. Three (3) of these are User settings (indicated by a "U") while the other three (3) are Factory registrations (indicated by an "F"). The Factory Contact settings are permanently written in memory, but the User settings can be overwritten with your own settings. You can even re-name them if you wish.

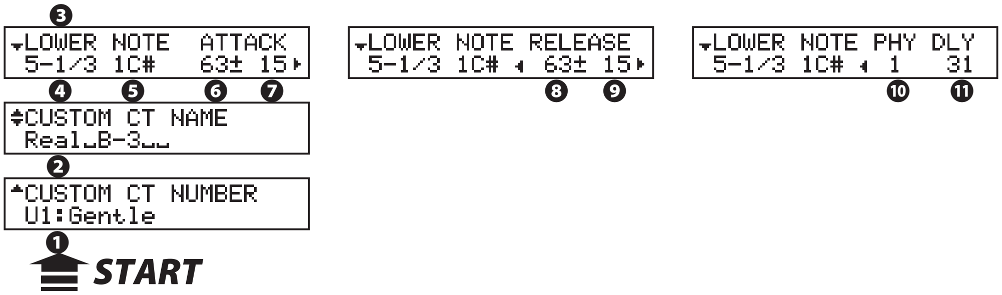
The first two pages of the CONTACT Edit Menu allow you to select the Custom Contact you wish to use or modify, as well as name a Custom Contact you have created. The remaining pages allow you to select how you want to key contacts to function. After you have made all of your changes, you can save them as a Custom Contact. Please consult pages 97 through 100 for more information about creating, saving and naming your own Custom Contacts. Also consult the APPENDIX at the back of this Guide for a list of the preset Custom Contacts.

CONTACT Edit Menu

This Edit Menu allows you to change how the Virtual Multi-Contacts function and to save your changes as a Custom Contact.


To locate this Menu, follow the steps below:

MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲
B TONEWHEEL PERCUSS
CONTACT PED.REG
▶
B TONEWHEEL PERCUSS
CONTACT PED.REG
ENTER


❸
LOWER NOTE ATTACK
5-1/3 1C# 63± 15
❹ ❺ ❻ ❼
LOWER NOTE RELEASE
5-1/3 1C# 63± 15
❽ ❾
LOWER NOTE PHY DLY
5-1/3 1C# 1 31
❿ ⓫
CUSTOM CT NAME
Real B-3
❷
CUSTOM CT NUMBER
U1:Gentle
❶
START

To activate the Custom Contact, set the Organ type in the DRAWBAR FUNCTION Mode at either of "A-100," "B-3," "C-3," "Mellow," and the Envelope at "Con(tact)." (P. 52)

❶ **CUSTOM NUMBER (P)**

This allows you to select the "CUSTOM NUMBER" to use or compile. The setting range is F1 to F3 (not re-writable) and U1 to U3 (re-writable).

The symbol "*" will be displayed when the Contact parameters are edited.

NOTE: This parameter is a Patch Parameter and is recorded as part of a Patch.

◆ CUSTOM CONTACT PARAMETERS

NOTE: None of these parameter settings will be remembered unless they are saved as a Custom Contact. See page 105 for information on how to do this.

❷ **CUSTOM NAME (CT)**

This allows you to name the Custom Contacts set using up to 10 letters.

Use the [◀][▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters.

NOTE: See page 98 for detailed instructions on naming Custom Contacts.

◆ SELECT CONTACT

❸ **CONTACT - MANUAL**

❹ **CONTACT - FOOTAGE**

❺ **CONTACT - NOTE**

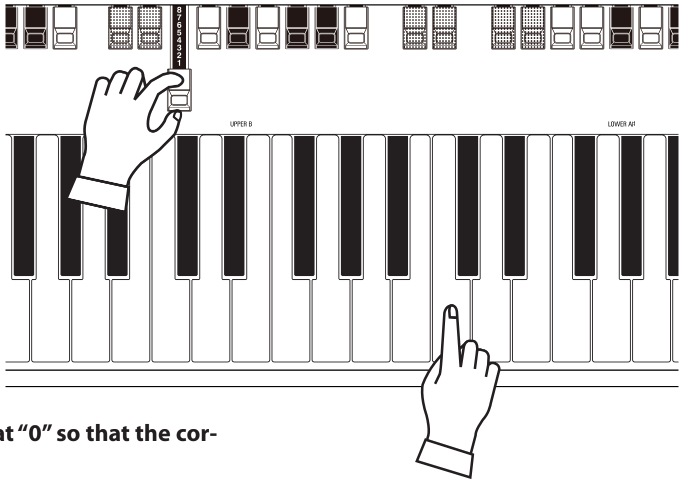
This allows you to select the virtual contact to adjust by "Manual," "Footage" and "Note."

To select the virtual contact, use the [VALUE] Rotary Knob or, slightly move the footage of the Drawbar while depressing the key you want to regulate (see the figure on the right).

To adjust all the footages or notes at the same time, set the cursor on the footage or NOTE, turn [VALUE] Rotary Knob clockwise until it displays "ALL" instead of a number.

When the Contact is selected, each parameter for the wheel (#6, to #11) is displayed.

NOTE: Be sure the [TRANSPOSE] and [OCTAVE] parameters are set at "0" so that the correct contact is edited.


8
7
6
5
4
3
2
1
UPPER B
LOWER A#

Selecting a contact

◆ CONDITION

❻ ATTACK TIME - CENTER (CT)

❼ ATTACK TIME - VARIATION (CT)

This allows you to set the time when the note is on until complete contact is made.

Set the Center value with ❻, the Variation with ❼.

The setting range is 0 (short) to 127 (long). A longer value produces a more pronouned contact.

❽ RELEASE RATE - CENTER (CT)

❾ RELEASE RATE - VARIATION (CT)

This allows you to set the time when the note is off until the Virtual Contact is released completely.

Set the Center value by ❽, the Variation with ❾.

The setting range is 0 (short) to 127 (long).

◆ PHYSICAL CONTACT

❿ PHYSICAL CONTACT - NUMBER (CT)

This allows you to select which physical contact to use for sounding the selected Virtual Contact on the keyboard of the XK-5 or XLK-5.

The setting value is 1--3. Physical contact 1 will sound first, then 2 then 3.

NOTE: The Hammond pedal claviers such as the XPK-250 have only one physical contact; therefore, this value does not apply to the Pedal tones..

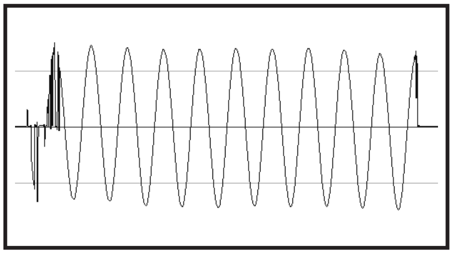
⓫ PHYSICAL CONTACT - DELAY (CT)

This allows you to select the time delay between when physical contact is made and the sounding of the note.

The setting value is 0 -- 800 ms. The larger the value, the longer the delay.

tips RELEASE KEY CLICK

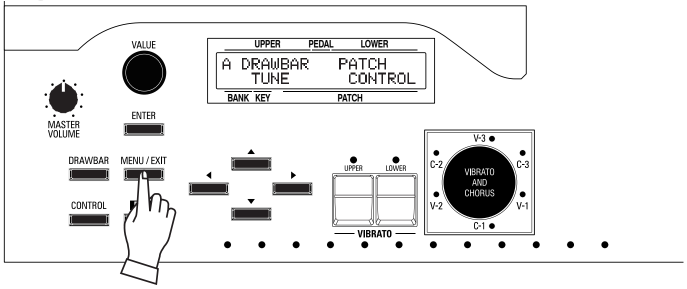
Because of the construction of the contacts on a tone-wheel organ, the Attack Key Click may be slightly more prominent than the Release Key Click. The figure below shows this.



CREATING AND RECORDING A CUSTOM CONTACT

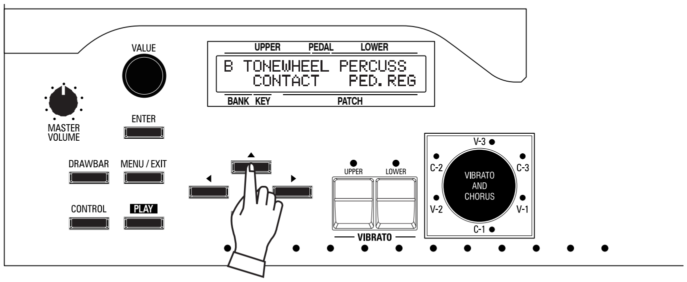
The Contact Parameters (= 2 - 11 of the previous page) can be saved as Custom Contacts. To record a Custom Contact, do the following:

1 LOCATE THE MENU Mode


A DRAWBAR PATCH
TUNE CONTROL
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS

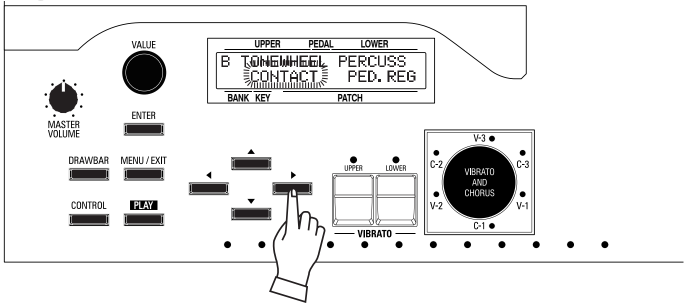
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


B TONEWHEEL PERCUSS
CONTACT PED.REG
PLAY

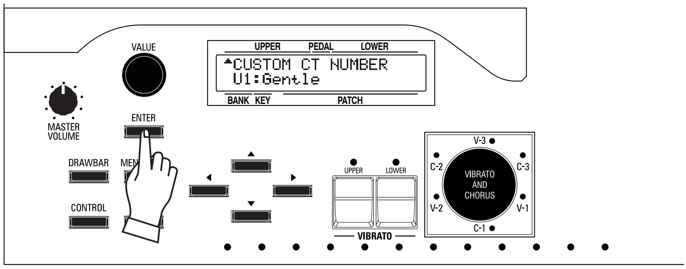
Press the [▲] Touch Button to display the B Menu.

3 SELECT THE CONTACT EDIT MENU


B TONEWHEEL PERCUSS
CONTACT PED.REG

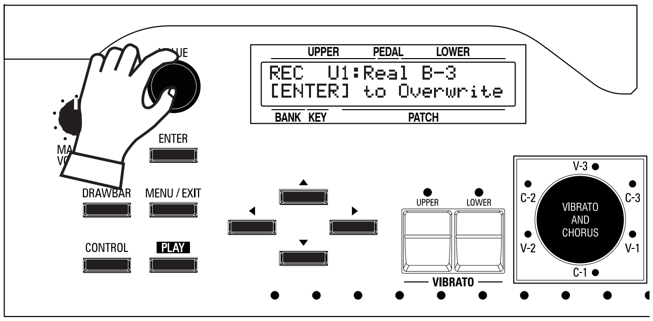
Press the [▶] Touch Button once. The word "CONTACT" should blink.

4 GO TO CONTACT FUNCTION MODE


CUSTOM CT NUMBER
U1:Gentle

Press [ENTER] to enter CONTACT FUNCTION Mode.

5

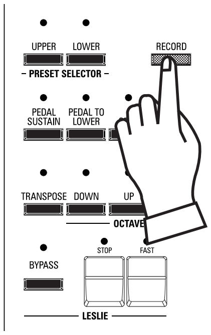

REC U1:Real B-3
[ENTER] to Overwrite

Use the [VALUE] Rotary Knob to select the Custom Contact you wish to edit.

6

Make whatever changes you wish to the Custom Contact you have selected.

7

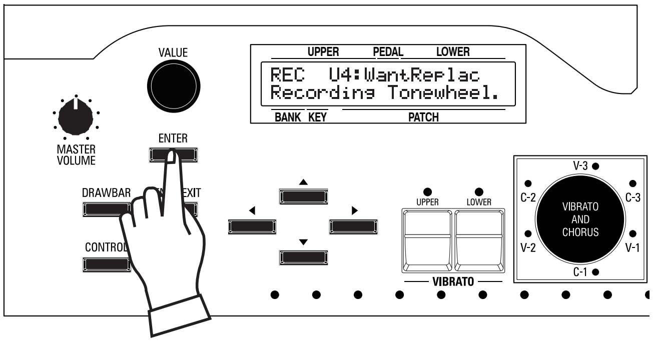

UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished editing your Custom Contact, press the [RECORD] Touch Button. The display will show:

"`[ENTER] to Overwrite`"

on the bottom line.

8


REC U4:WantReplac
Recording Tonewheel.

Press [ENTER] to record the Custom Contact. The display will show, "`Recording Contact...`" for approximately 1 second.

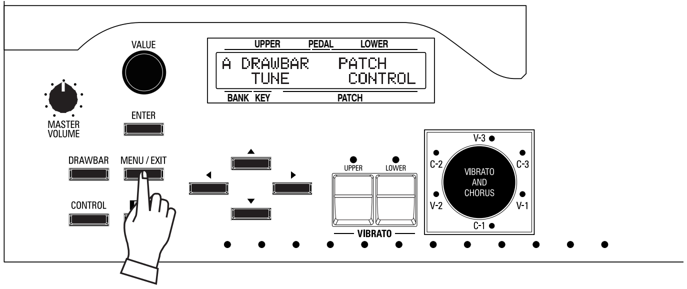
When the message no longer displays, your settings has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Contact, press the [MENU/EXIT] or [PLAY] Touch Button.

NAMING A CUSTOM CONTACT

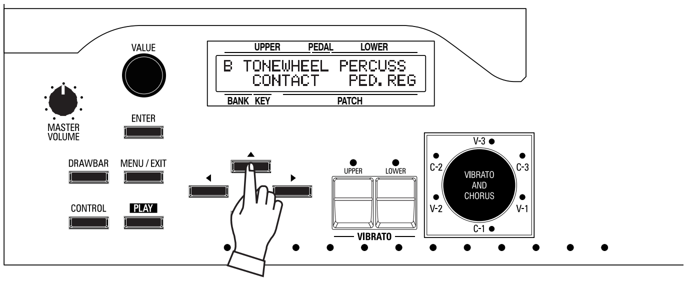
After you have created and saved a Custom Contact, you may give it a unique name if you wish. To do this:

1 LOCATE THE MENU Mode


A DRAWBAR PATCH
TUNE CONTROL
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS
VIBRATO

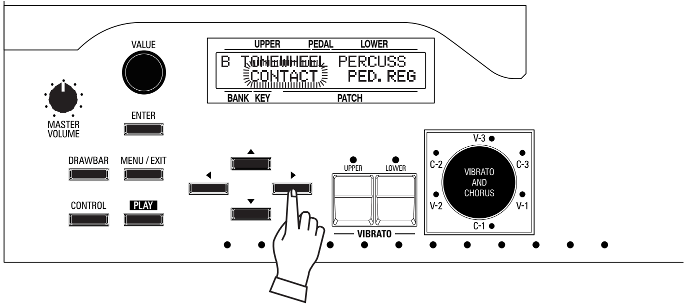
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU B


B TONEWHEEL PERCUSS
CONTACT PED.REG
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

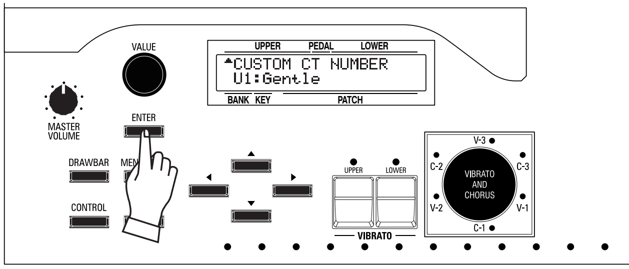
Press the [▲] Touch Button to display the B Menu.

3 SELECT THE CONTACT EDIT MENU


B TONEWHEEL PERCUSS
CONTACT PED.REG
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

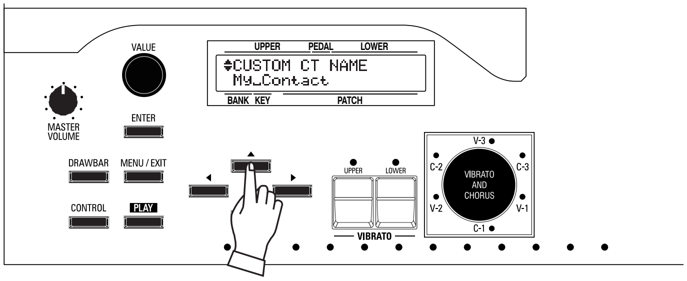
Press the [▶] Touch Button once. The word "CONTACT" should blink.

4 GO TO CONTACT FUNCTION Mode


CUSTOM CT NUMBER
U1:Gentle
VALUE
ENTER
MASTER VOLUME
DRAWBAR
CONTROL
VIBRATO AND CHORUS
VIBRATO

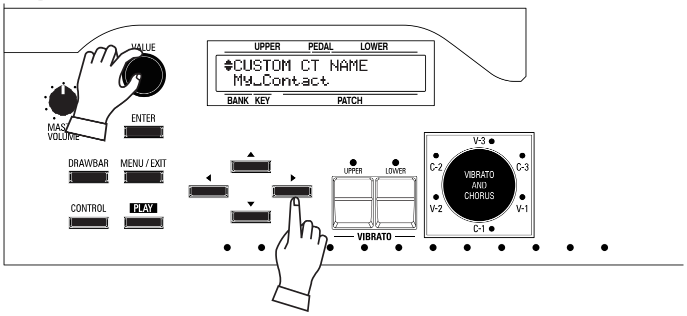
Press [ENTER] to enter CONTACT FUNCTION Mode.

5 SELECT THE CONTACT NAME PAGE


CUSTOM CT NAME
My_Contact
VALUE
ENTER
MASTER VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

Press the [▲] Touch Button to select Page 2 of the CONTACT FUNCTION Mode.

6 INPUT THE NAME

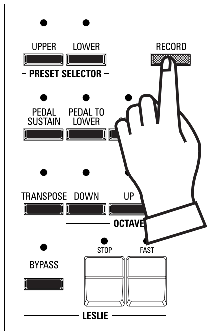

CUSTOM CT NAME
My_Contact
VALUE
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons: Moves the cursor.
[VALUE] Rotary Knob: Selects letters.

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

7


UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished naming your Custom Contact, press the [RECORD] Touch Button. The display will show:

"`[ENTER] to Overwrite`"

on the bottom line.

8

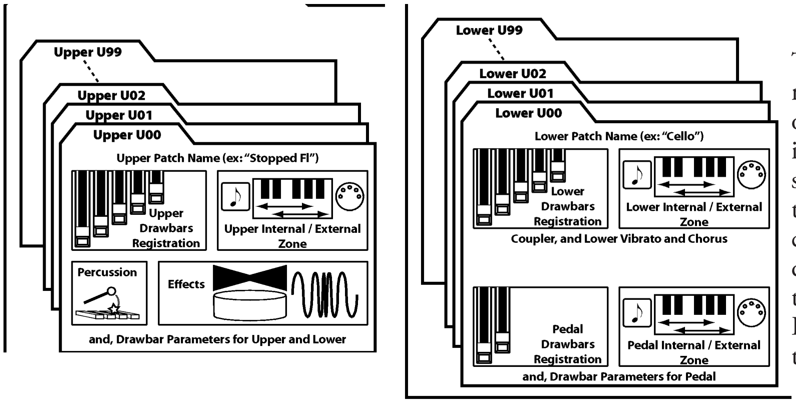
Press [ENTER] to record the Custom Contact with your custom name. The display will show, "`Recording Contact...`" for approximately 1 second.

When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Custom Contact, press the [MENU/EXIT] or [PLAY] Touch Button.

PATCHES & FAVORITES

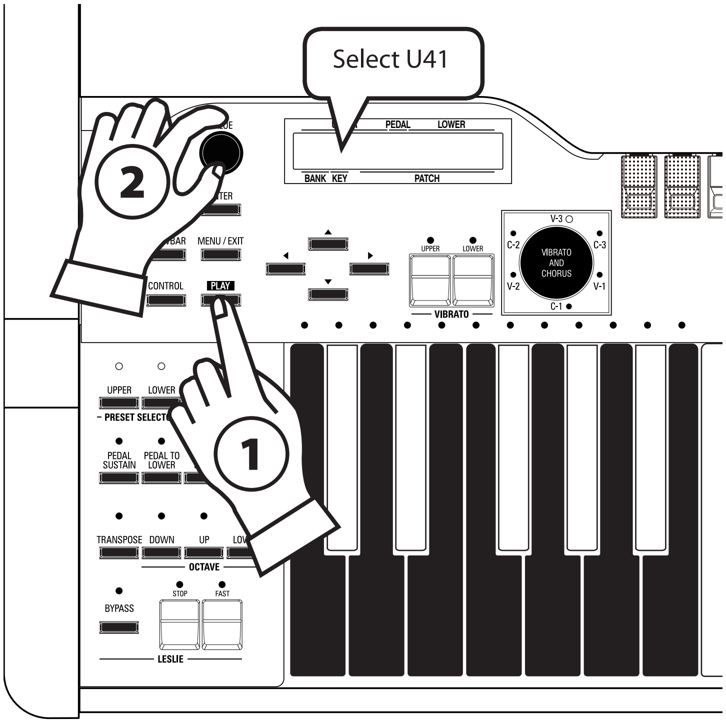
WHAT IS A "PATCH?"


Upper U99
Upper U02
Upper U01
Upper U00
Upper Patch Name (ex: "Stopped Fl")
Upper Drawbars Registration
Upper Internal / External Zone
Percussion
Effects
and, Drawbar Parameters for Upper and Lower
Lower U99
Lower U02
Lower U01
Lower U00
Lower Patch Name (ex: "Cello")
Lower Drawbars Registration
Lower Internal / External Zone
Coupler, and Lower Vibrato and Chorus
Pedal Drawbars Registration
Pedal Internal / External Zone
and, Drawbar Parameters for Pedal

The Hammond XK-5 has, in addition to Drawbar settings, many ways to customize and tailor those settings. 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 called a **Patch**. This term derives from old-style synthesizers which used patch cords to connect the various components together to produce 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 instrument.

HOW TO RECALL A PATCH

◆ Example: Recall Patch U41


Select U41
2
1
PEDAL
LOWER
BANK KEY
PATCH
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
VIBRATO AND CHORUS
V-3
C-3
V-1
C-1
V-2
C-2
PRESET SELECT
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

1. Enter PLAY Mode

If the display is not in PLAY Mode, press the [PLAY] Touch Button.

2. Select a Patch

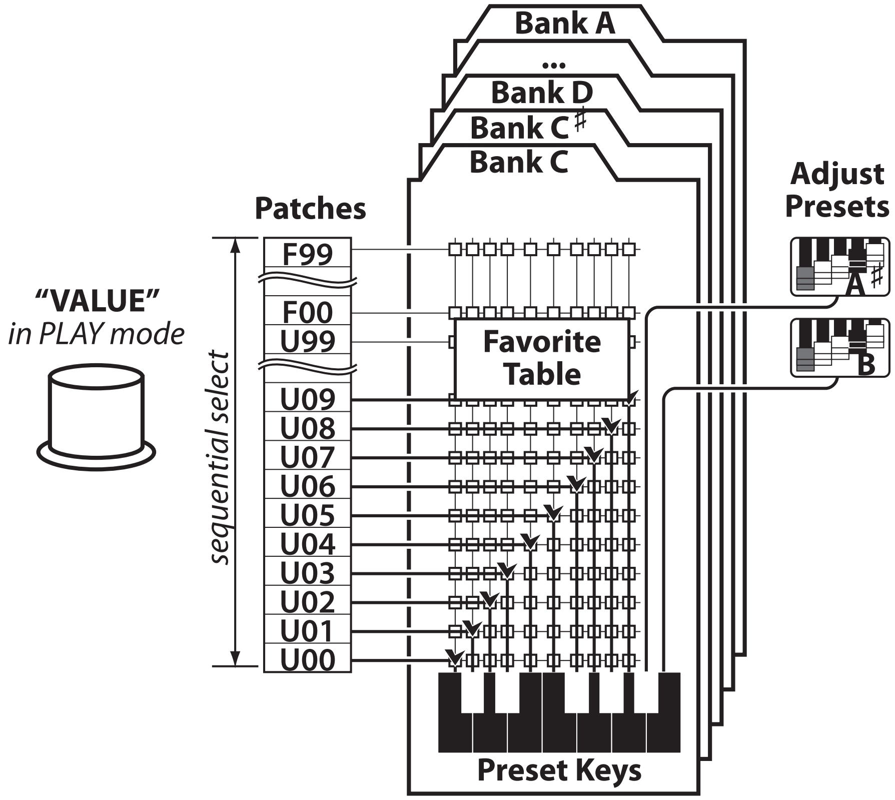
Use the {VALUE} Rotary Knob to select Patch number "U41."

NOTE: You can assign a Patch to any Preset Key, and recall it immediately. See page 114 for more information.

NOTE: A Patch can contain not only Drawbar settings but other parameters such as Leslie Cabinet, Reverb, Multi-Effects, etc. For a complete listing of all Patch Parameters, please consult the APPENDIX at the back of this Guide.

The settings you have prepared can be recorded to User Patches.

USER AND FACTORY

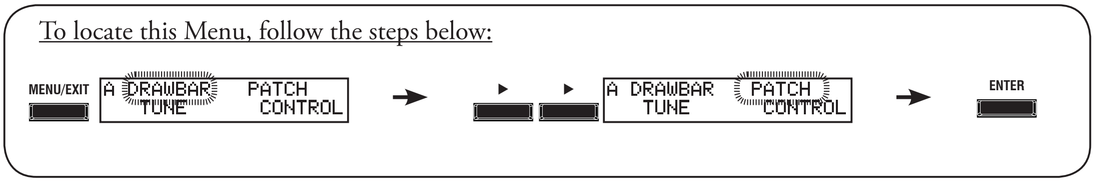

Bank A
...
Bank D
Bank C♯
Bank C
Patches
Adjust
Presets
F99
F00
U99
U09
U08
U07
U06
U05
U04
U03
U02
U01
U00
"VALUE"
in PLAY mode
sequential select
Favorite
Table
A♯
B
Preset Keys

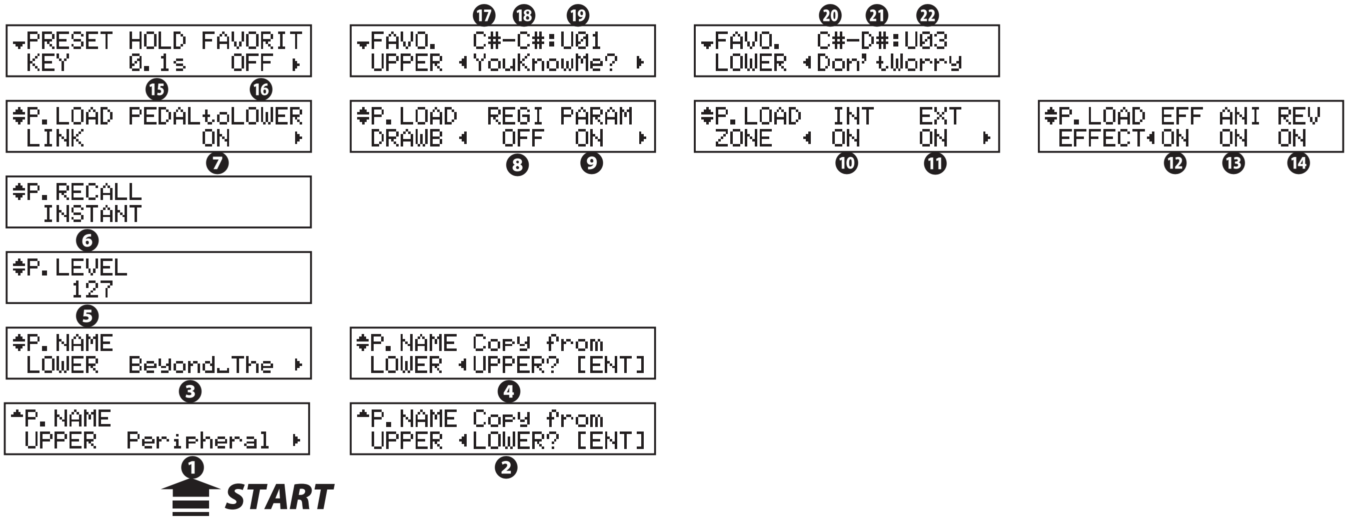
There are two categories of Patches on the XK-5 - **Factory** and **User**. TheFactory Patches are factory-programmed and cannot be changed. The User Patches are also factory-programmed; however, you can make changes to them or even overwrite them entirely in order to create your own custom Patches. In the display, User Patches are designated by the letter "U," and Factory Patches are designated by the letter "F." Each category contains 100 Patches for a total of 200.

NOTES: The XK-5 comes from the factory with default settings for all 200 Patches. The "U" Patches duplicate the Factory Patches - Patch P41 and Patch U41 will be identical, for example. Please consult the APPENDIX at the back of this Guide for a complete listing of the factory Patches.

PATCH Edit Menu

This Edit Menu allows you to customize the characteristics of the Patches.


To locate this Menu, follow the steps below:
MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▶ ▶
A DRAWBAR PATCH
TUNE CONTROL
ENTER


PRESET HOLD FAVORIT
KEY 0.1s OFF
⑮ ⑯
FAVO. C#-C#:U01
UPPER YouKnowMe?
⑰ ⑱ ⑲
FAVO. C#-D#:U03
LOWER Don'tWorry
⑳ ㉑ ㉒
P.LOAD PEDALtoLOWER
LINK ON
⑦
P.LOAD REGI PARAM
DRAWB OFF ON
⑧ ⑨
P.LOAD INT EXT
ZONE ON ON
⑩ ⑪
P.LOAD EFF ANI REV
EFFECT ON ON ON
⑫ ⑬ ⑭
P.RECALL
INSTANT
⑥
P.LEVEL
127
⑤
P.NAME
LOWER Beyond The
③
P.NAME Copy from
LOWER UPPER? [ENT]
④
P.NAME
UPPER Peripheral
①
P.NAME Copy from
UPPER LOWER? [ENT]
②
START

◆ PATCH NAME

Each Patch has separate names for UPPER and LOWER.

Use the [▲][▼] Touch Buttons to move between UPPER and LOWER in the display.

❶ UPPER (P), ❸ LOWER (P)

This allows you to name the currently selected Patch using up to 10 letters or characters (P. 117).

Use the [◀][▶] Touch Buttons to move the cursor, then use the [VALUE] Rotary Knob to select characters. The available characters include: Punctuation Marks (space - . ‘ &), Numeric Characters (0 ~ 9), Upper-case Letters (“A ~ Z”), and Lower-case Letters (“a ~ z”).

❷ COPY FROM LOWER, ❹ COPY FROM UPPER

This allows you to copy a Patch from another Manual.

◆ PATCH LEVEL

❺ PATCH LEVEL (P)

This allows you to adjust the volume of the selected Patch   Patch Volume is also controlled by MIDI Controller #7 “Volume.”

The setting range is “0” to “127.”

NOTE: The Patch level is recorded to an UPPER Patch. If only a LOWER Patch is recalled, the Patch Level will not change.

◆ PATCH RECALL

❻ PATCH RECALL (P)

This allows you to select how Patches are recalled.

INSTANT: The Patch is recalled instantly when the [VALUE] Rotary Knob is turned.
ENTERED: The Patch is recalled when the [ENTER] Touch Button is pressed and released after the [VALUE] Rotary Knob is turned.

◆ PATCH LOAD

Allows you to select which components of the instrument will be saved as part of a Patch.

❻ PATCH LOAD - PEDAL TO LOWER (B)

Allows you to select whether to load Pedal parameters when a LOWER Patch is recalled.

❼ PATCH LOAD - REGISTRATION (B)

Allows you to select whether to load Drawbar registrations.

❽ PATCH LOAD - PARAMETERS (B)

Allows you to select whether to load Parameters such as organ type or Percussion.

❾ PATCH LOAD - INTERNAL ZONE (B)

Allows you to select whether to load Parameters which pertain to the Internal Zones and Pedal to Lower.

❿ PATCH LOAD - EXTERNAL ZONE (B)

Allows you to select whether to load Parameters specific to the External Zone to control external MIDI equipment.

⓫ PATCH LOAD - DRAWBAR EFFECT (B)

Allows you to select whether to load Parameters pertaining to Patch Level, Overdrive, Multi-Effects, Equalizer.

⓬ PATCH LOAD - ANIMATION (B)

Allows you to select whether to load Vibrato/Chorus parameters and Leslie Cabinets.

⓭ PATCH LOAD - REVERB (B)

Allows you to select whether to load Reverb parameters.

NOTE: Parameters 1, 3 and 5 are Patch Parameters and are recorded to each Patch. They are lost unless you save the patch.

NOTE: Each Patch Load parameter (B) is a Bank Parameter. Bank Parameters are common for each Patch in the current Bank and are recorded when the value is set.

◆ PRESET KEYS

⓮ PRESET KEY - HOLD (G)

This allows you to set the time for the Patch to be actually recalled, by holding down the Preset Key.

The setting range is 0.0 -- 1.0 [sec].

⓯ FAVORITE -SWITCH (G)

This allows you to set whether or not to use the Favorite function of the Preset Keys.

OFF: Each of the Preset Keys C-C -- A-A corresponds with the Patches U00 -- U99 respectively.
If you press the Preset Key holding down the [RECORD] Touch Button, the Patch is recorded.
ON: The Preset Key recalls the Patch in accordance with the Favorite Table.
If you press a Preset Key while holding the [RECORD] Touch Button, it is associated between current Patch and the Preset key on the Favorite Table.

◆ FAVORITE

This is for displaying and changing the Patch referred to for each Preset Key.

⓰ UPPER BANK (G), ⓱ UPPER KEY (G), ⓲ UPPER PATCH (G)

⓳ LOWER BANK(G), ⓴ LOWER KEY (G), ㉑ LOWER PATCH (G)

First select the BANK ⓰/⓳ and KEY ⓱/⓴ of the Preset Keys you want to associate then select the PATCH ⓲/㉑.

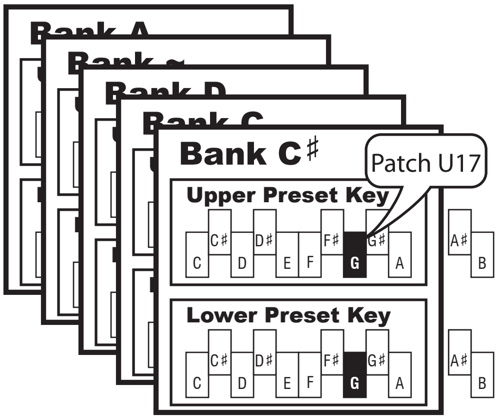
You can also locate these pages by holding down each of the Preset Keys [C] -- [A] for a certain length of time.

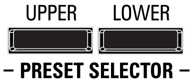
NOTE: These parameters are Global Parameters and are common for each Patch. For a complete listing of all Global Parameters, please consult the APPENDIX at the back of this Guide.

PATCH BANKS

There are 10 Preset Banks, each with 9 Patches to store and recall your registrations.

WHAT ARE "PRESET KEYS?"


Bank A
Bank C♯
Patch U17
Upper Preset Key
C♯
D♯
F♯
G♯
A♯
C
D
E
F
G
A
B
Lower Preset Key
C♯
D♯
F♯
G♯
A♯
C
D
E
F
G
A
B


UPPER
LOWER
– PRESET SELECTOR –

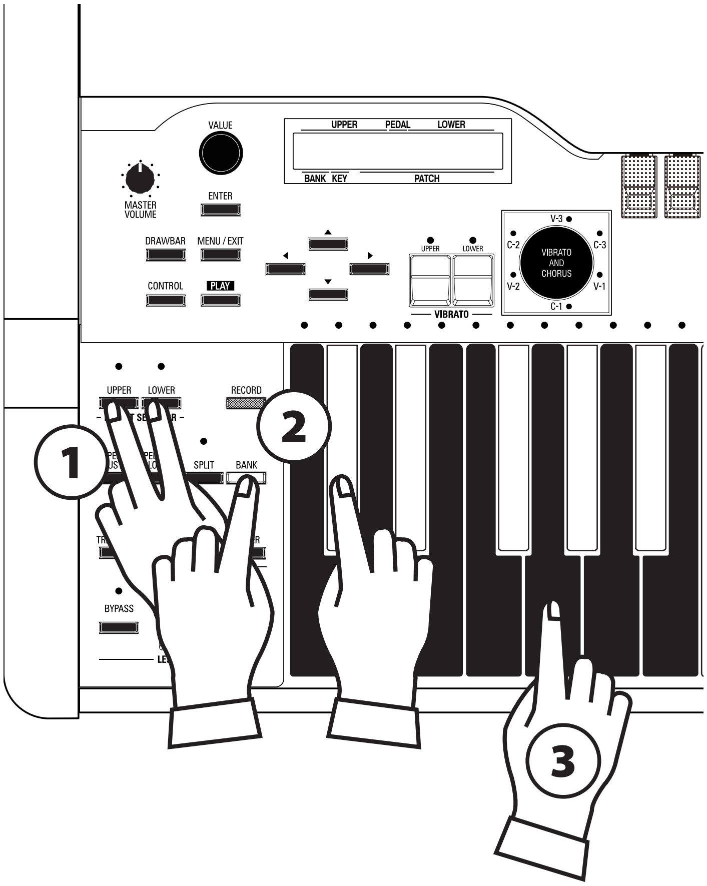
A feature unique to Hammond Organs is a set of twelve keys identical to the playing keys except reversed in color. These keys are not playing keys, but are used to recall registrations, similar to the combination pistons found on pipe organs. On the XK-5, the Preset Keys are used to recall frequently-used Patches. Ten (10) Patches may be recalled (keys "C" through "A"). The "A#" and "B" keys recall whatever tone color is set up on the Drawbars associated with that key and its accompanying Parameters.

The 10 Preset Banks are chosen by the Preset Keys in conjunction with the [BANK] Touch Button located to the left of the Preset Keys.

The PRESET SELECTOR Touch Buttons to the left of the Preset Keys determine which Manual the Preset Keys will control. When the [UPPER button is "ON," the Preset Keys will recall only UPPER Manual Presets. The LED above the selected Preset will light red. If the [LOWER] Touch Button is "ON," only the LOWER Manual Presets will be recalled and the associated LED will light green. If both buttons are "ON," both UPPER and LOWER Presets will be recalled simultaneously - for example, pressing the "C#" Preset Key will recall both UPPER and LOWER "C#" Presets. The LED above each Preset will show red and green togather.

RECALL BY PRESET KEYS

◆ ex: Recall C#-G


VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-3
V-1
C-1
V-2
C-2
VIBRATO AND CHORUS
UPPER
LOWER
RECORD
SPLIT
BANK
BYPASS
1
2
3

1. Select the Manuals you wish to recall

Press both the [UPPER] and [LOWER] PRESET SELECTOR Touch Buttons. This will cause the Preset Keys to change the settings for both Manuals.

2. Select the BANK

The [BANK] Touch Button is located immediately to the left of the Preset Keys. Use this button to select from among 10 Preset Banks.

For this example, while holding down the [BANK] Touch Button, press the "C♯" Preset Key.

NOTE: The LED for the Preset Key indicates the selected Bank while the [BANK] Touch Button is pressed and held.

3. Select the KEY

Press the "G" Preset Key. The Preset is selected and the setting changes.

4. Try recalling various Presets.

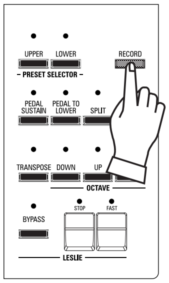
NOTE: On a tone-wheel organ, the Preset Keys would recall a single bank of hard-wired Drawbar registrations and no other settings. In addition, the Touch-Response Percussion could be activated only on the Upper "B" Preset Key. The XK-5 is initially set this way from the factory; however, as explained on page 104, the PATCH LOAD feature enables you to select which Patch Parameters will be recalled. In this way, you can save and recall Patches that will change not only Drawbars but Percussion settings, Vibrato/Chorus settings, Leslie Cabinets, etc.

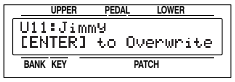
RECORD THE PATCH TO MEMORY

All the previous settings can be recorded to any Patch within the range of U00 to U99.

◆ Example: RECORD TO U32

1. LOCATE THE RECORD MODE


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

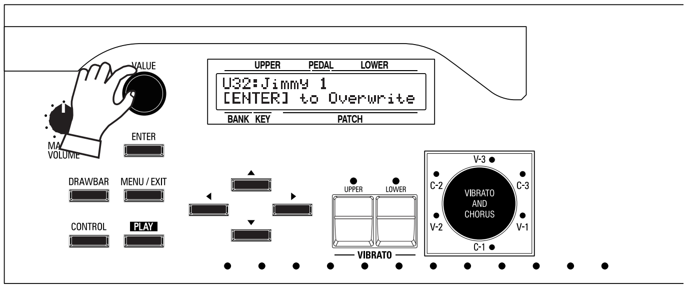

UPPER
PEDAL
LOWER
BANK KEY
PATCH

U11:Jimmy
[ENTER] to Overwrite

Press the [RECORD] Touch Button.

You will be asked if you want to Overwrite the selected Patch.

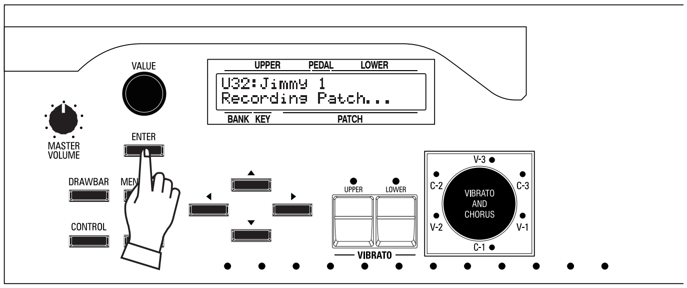
2. SELECT THE PATCH NUMBER


VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

U32:Jimmy 1
[ENTER] to Overwrite

Use the [VALUE] Rotary Knob to select the Patch number to record. For this example, use "U32."

3. RECORD THE PATCH


VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

U32:Jimmy 1
Recording Patch...

Press [ENTER] to record the Patch. The display will show, "`Recording Patch...`" for approximately 1 second.

When the message no longer displays, your settings has been saved.

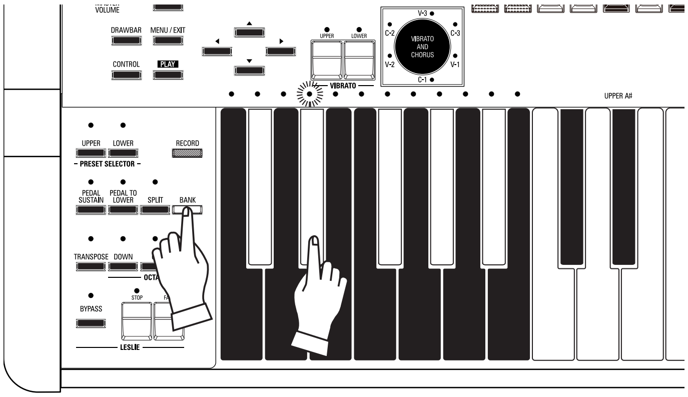
NOTE: If you DO NOT wish to overwrite the Patch, press the [MENU/EXIT] Touch Button.

NOTE: If you turn the power to the XK-5 "OFF," the modifications you have made to any of the Patches will be remembered when you next turn the organ "ON."

The Patch can be recorded by using Preset Keys when the Favorite is "OFF" (P. 111).

◆ Example: RECORD TO D#-D (U32)

1. SELECT BANK

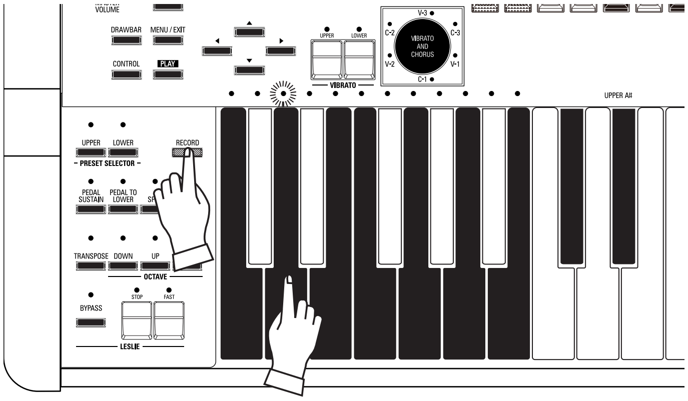

VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
UPPER A#
UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
BYPASS
STOP
LESLIE

While pressing and holding the [BANK] Touch Button, touch the "D#" Preset Key. This will select the Preset Bank associated with that key.

When doing the above, the LED above the "D#" Preset Key will light, indicating the "D#" Preset Bank.

When the [BANK] Touch Button is released, the LEDs above the Preset Keys will show which Presets are active.

2. SELECT KEY


VOLUME
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
UPPER A#
UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

Press the Preset Key [D] with holding [RECORD] Touch Button.

The Preset is decided, display shows "`Recording Patch`." After this message disappears, the Recording process is complete and the display returns to the previous mode.

NOTE: This procedure does NOT apply to the Adjust Presets ("A#" and "B.").

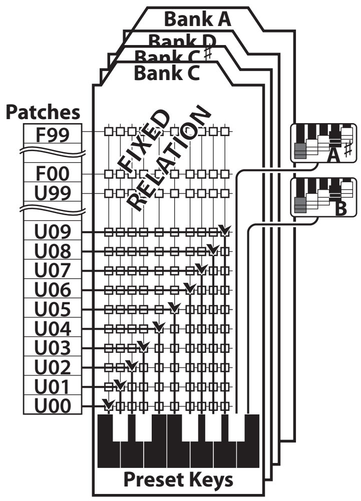
NOTE: If you turn the power to the XK-5 "OFF," the modifications you have made to any of the Patches will be remembered when you next turn the organ "ON."

ASSIGNING PATCHES (FAVORITES)

Patches can be selected using the [VALUE] Rotary Knob. However, it is much more convenient to be able to recall frequently-used settings instantly during performance. On the XK-5, an individual Patch that has been stored to a Preset Key is referred to as a "Favorite." This page explains this in more detail.

WHAT IS A "FAVORITE?"

When Favorite is "OFF"



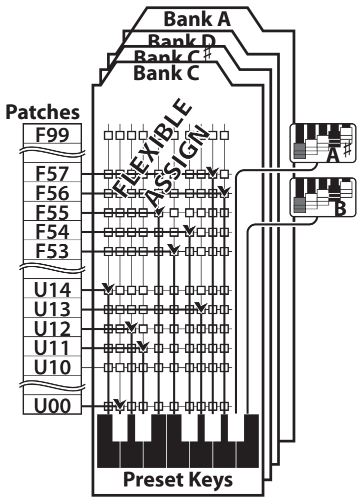
To record a Patch:

[BANK] + Preset Key,
[RECORD] + Preset Key

To assign a Favorite:

None

When Favorite is "ON"



To record a Patch:

Press [RECORD],
Select Patch# by [VALUE],
and Press [ENTER]

To assign a Favorite:

Select a Patch by [VALUE],
[BANK] + Preset Key,
[RECORD] + Preset Key

Normally, the Preset Keys will recall only those Patches which appear in a specific Bank - you will notice that the Patch numbers will appear sequentially in the display as you progress through the Presets from "C#" through "A."

Howvere, there will be cases where you want to be able to recall Patches out of sequence - for example, the "C#" Preset Key may recall Patch U45, and the "D" Preset Key will recall Patch U19. The FAVORITES feature allows you to save individual Patches to the Preset Keys in any order you desire and recall them the same way. The figure on the left illustrates this.

USING THE PRESET KEYS TO STORE FAVORITES

The Preset Keys can be used two different ways which are described below.

◆ Favorites is "OFF"

- The Preset Keys of the XK-5 work in a manner similar to a tone-wheel Hammond Organ.
- The Preset Keys "C-C" to "A-A" corresponding patches "U00" to "U99" respectively.
- To record a Patch (with selecting the Bank), press the any Preset Key with holding the [BANK] Touch Button, and press any Preset Key with holding the [RECORD] Touch Button.

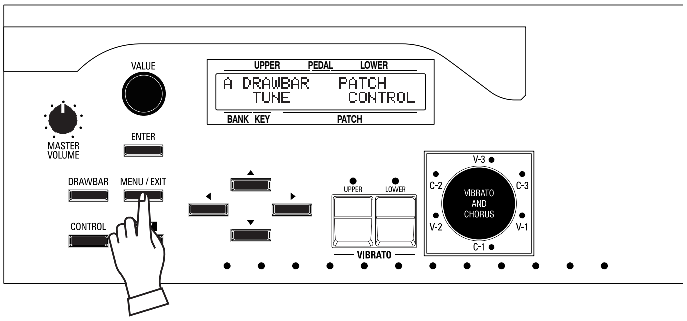
◆ Favorites is "ON"

- The Preset Keys of the XK-5 recalls Patches regarding Favorite table.
- To record a Patch, press the [RECORD] Touch Button, select the Patch number to record by [VALUE] Rotary Knob, and press the [ENTER] Touch Button to decide.
- The operation "[RECORD] + a Preset Key" means associate between a Patch currently selected and a Preset Key, not the recording a Patch..

NOTE: The "C" Preset Key is also called the Cancel Key. It silences the manuals on a tone-wheel Hammond Organ. Although you can record a Preset into the "C" Preset Key, the factory setting replicates that of a tone-wheel organ - no sound will be heard if the "C" Preset Key is engaged.

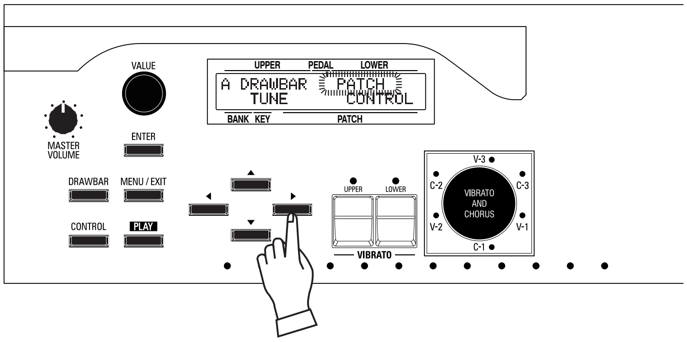
SWITCHING "FAVORITE" ON AND OFF

1. LOCATE THE MENU Mode


VALUE
UPPER
PEDAL
LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

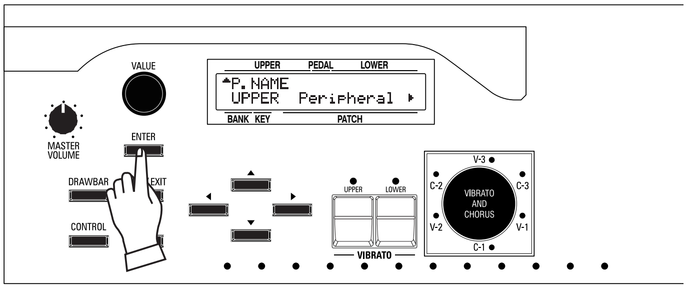
Press the [MENU/EXIT] Touch Button to display the menu. If the above message does not display, press [PLAY] then [MENU/EXIT].

2. SELECT "PATCH"


VALUE
UPPER
PEDAL
LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

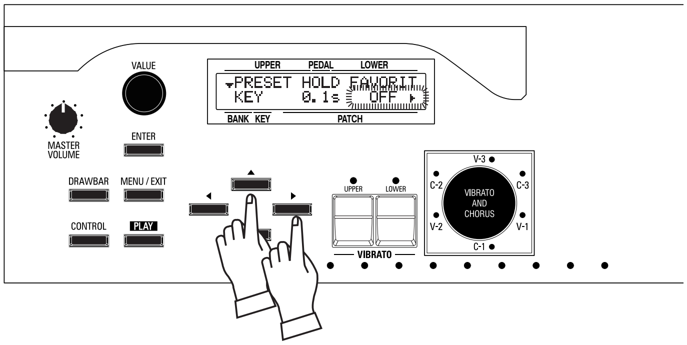
Press the [▶] Touch Button two times. The word "PATCH" should now blink.

3. ENTER THE PATCH FUNCTION PAGE


VALUE
UPPER
PEDAL
LOWER
P.NAME
UPPER Peripheral ▸
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

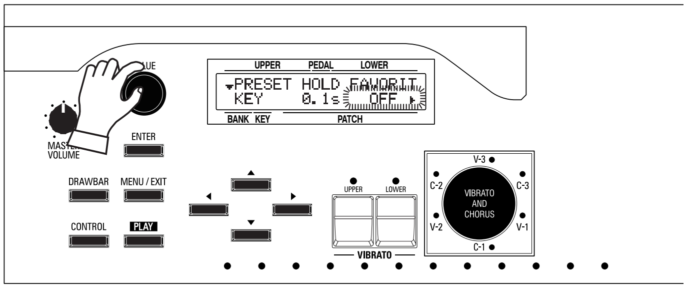
Press the [ENTER] Touch Button to enter PATCH FUNCTION Mode.

4. LOCATE THE PRESET KEY PAGE


VALUE
UPPER
PEDAL
LOWER
PRESET HOLD FAVORIT
KEY 0.1s OFF ▸
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

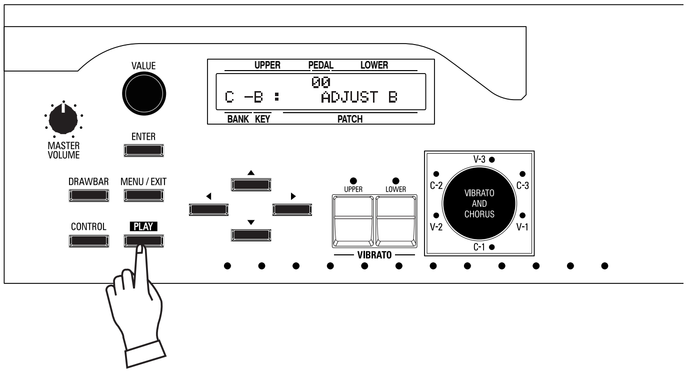
Press the [▲] Touch Button four times, and the [▶] Touch Button once. The word underneath "FAVORIT" will now blink.

5. CHANGE THE VALUE


UPPER
PEDAL
LOWER
PRESET HOLD FAVORIT
KEY 0.1s OFF
BANK KEY
PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

Use the [VALUE] Rotary Knob to select "ON" or "OFF."

6. BACK TO THE PLAY Mode


VALUE
UPPER
PEDAL
LOWER
00
C -B : ADJUST B
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
VIBRATO

Press the [PLAY] Touch Button to return to PLAY Mode.

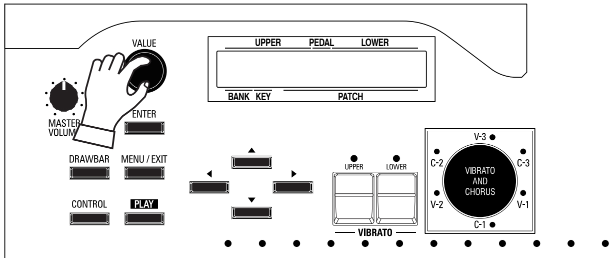
ASSIGN A PATCH TO A PRESET KEY (“FAVORITE”)

Assignment Patches to the 100 Preset Bank/Key (“C-C” to “A-A,” except A♯ and B) regarding your playlist or changing scene in the song.

1. SET THE FAVORITE SWITCH TO “ON.”

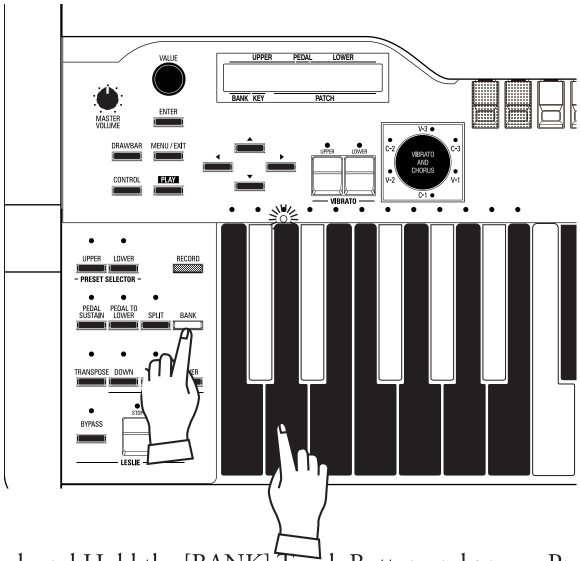
Make sure that the “FAVORIT” switch is set to “ON.” Refer to the previous page for instructions on how to do this.

2. SELECT A PATCH


VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1

Select a Patch which you want to assign to a Preset Key.

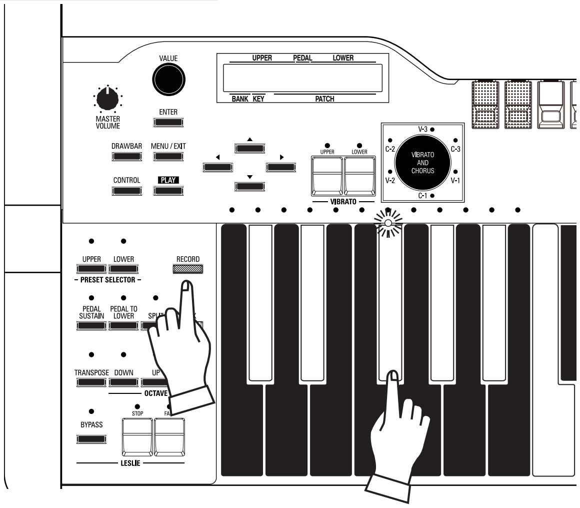
3. SELECT A PRESET BANK


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
SPLIT
BANK
TRANSPOSE
DOWN
BYPASS
LESLIE

Touch and Hold the [BANK] Touch Button and press a Preset Key to select a Preset Bank. (“D” is shown in the example above.)

NOTE: If you have already selected a Preset Bank, you may skip this step.

4. SELECT A PRESET


UPPER
LOWER
RECORD
PRESET SELECTOR
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
OCTAVE
BYPASS
STOP
LESLIE

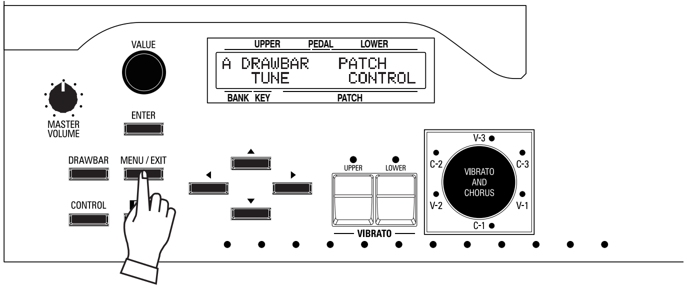
Touch and Hold the red [RECORD] Touch Button and press the Preset Key where you want to save your Patch. The display will show:

`Recording Favorite...`

The LED above the Preset Key will flash severasl times. After it stops flashing, your Patch is saved as a Favorite to the Preset Key.

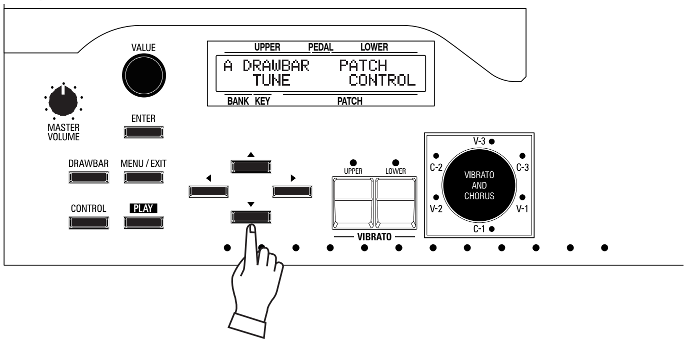
NAMING A PATCH

1 LOCATE THE MENU Mode


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
VIBRATO AND CHORUS
V-3
C-2
C-3
V-2
V-1
C-1
UPPER
LOWER
VIBRATO

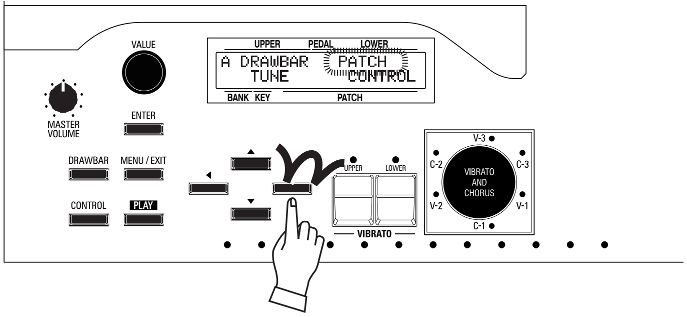
Press the [MENU/EXIT] Touch Button. MENU Mode will be displayed.

2 LOCATE MENU A


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

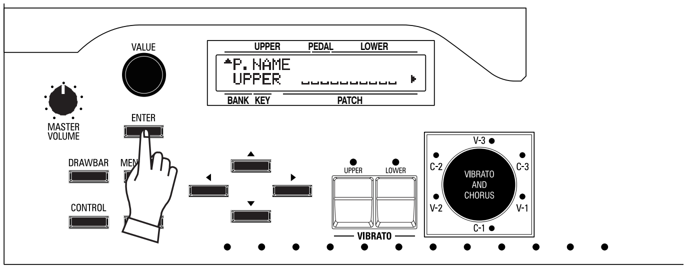
If Menu A is not displayed, press the [▼] Touch Button until "A" shows in the upper left corner of the display.

3 SELECT A PATCH


VALUE
UPPER PEDAL LOWER
A DRAWBAR PATCH
TUNE CONTROL
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

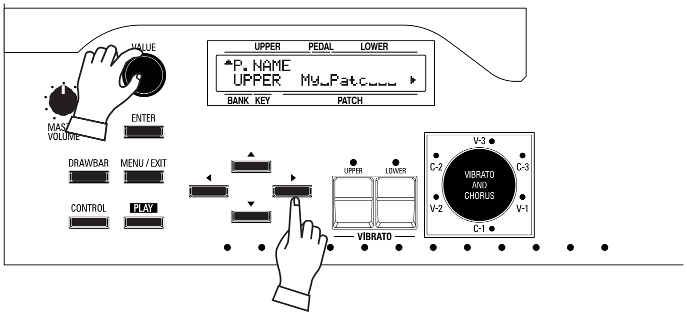
Press the [▶] Touch Button twice. The word "PATCH" should blink.

4 GO TO PATCH FUNCTION Mode


VALUE
UPPER PEDAL LOWER
P. NAME
UPPER
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
VIBRATO AND CHORUS
VIBRATO

Press [ENTER] and go to PATCH FUNCTION Mode.

5 INPUT THE NAME


VALUE
UPPER PEDAL LOWER
P. NAME
UPPER My_Patc___
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
VIBRATO AND CHORUS
VIBRATO

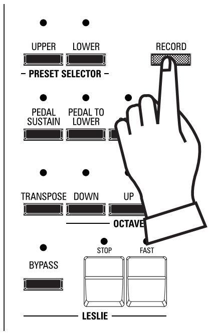
You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons: Moves the cursor.
[VALUE] Rotary Knob: Selects letters.

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

NOTE: This procedure is for naming the UPPER Manual. The LOWER Manual Patch is named separately (P. 110).

6


UPPER
LOWER
RECORD
– PRESET SELECTOR –
PEDAL SUSTAIN
PEDAL TO LOWER
TRANSPOSE
DOWN
UP
OCTAVE
BYPASS
STOP
FAST
LESLIE

After you have finished naming your Patch, press the [RECORD] Touch Button. The display will show:

"`[ENTER] to Overwrite`"

on the bottom line.

7

Press [ENTER] to record the Custom Contact with your custom name. The display will show, "`Recording Patch...`" for approximately 1 second.

When the message no longer displays, your custom name has been saved.

NOTE: If you DO NOT wish to overwrite the currently selected Patch, press the [MENU/EXIT] or [PLAY] Touch Button.

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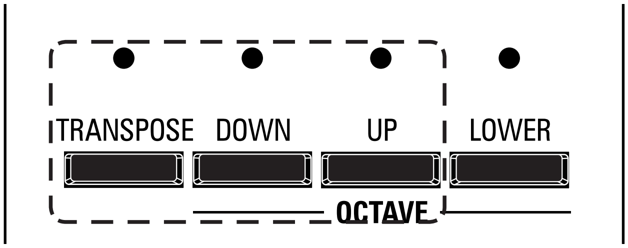
SPECIAL ADVANCED FEATURES

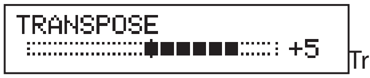
TRANSPOSE

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. TRANSPOSE will step either up or down six (6) semitones or half-steps from the center position. The TRANSPOSE feature consists of the [TRANSPOSE] Touch Button, plus the [DOWN] and [UP] Touch Buttons immediately to the right of the [TRANSPOSE] Touch Button. The [DOWN] Touch Button allows you to transpose lower and the [UP] Touch Button allows you to transpose higher.



[TRANSPOSE] Touch Button

- To raise the pitch, press the [UP] Touch Button, while holding down the [TRANSPOSE] Touch Button.
- To lower the pitch, press the [DOWN] Touch Button, while holding down the [TRANSPOSE] Touch Button.



Transpose is at "+5."

When performing this operation, the status of the transposition is shown in the display.
The [TRANSPOSE] LED lights on if the value is not "0,".

TRANSPOSE will affect:

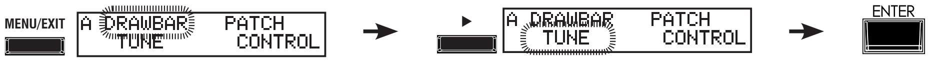
1). The internal sounds of the instrument (Drawbars & Percussion).
2). MIDI IN Note Data.
3). MIDI Note Data sent OUT to the External Zones.
4). MIDI Note Data sent from a connected MIDI Pedal Clavier.

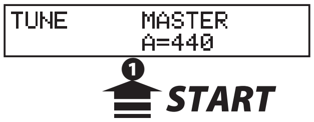
NOTE: TRANSPOSE is a temporary parameter, and is not recorded to a Patch. When the power to the instrument is turned "OFF," it will reset to "0."

TUNE

This Edit Menu allows you to fine-tune the overall pitch of the entire instrument up or down.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▶
A DRAWBAR PATCH
TUNE CONTROL
ENTER


TUNE MASTER
A=440
①
START

◆ MASTER TUNE

❶ MASTER TUNE

This parameter changes the overall tuning pitch of the entire instrument. The reference pitch is "A-440." The selectable range is from "A-430" through "A-450."

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

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

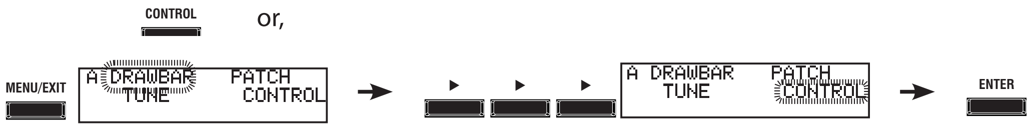
NOTE: MASTER TUNE is a Global Parameter and is common for all Patches. For a complete listing of all Global Parameters, please consult the APPENDIX at the back of this Guide.

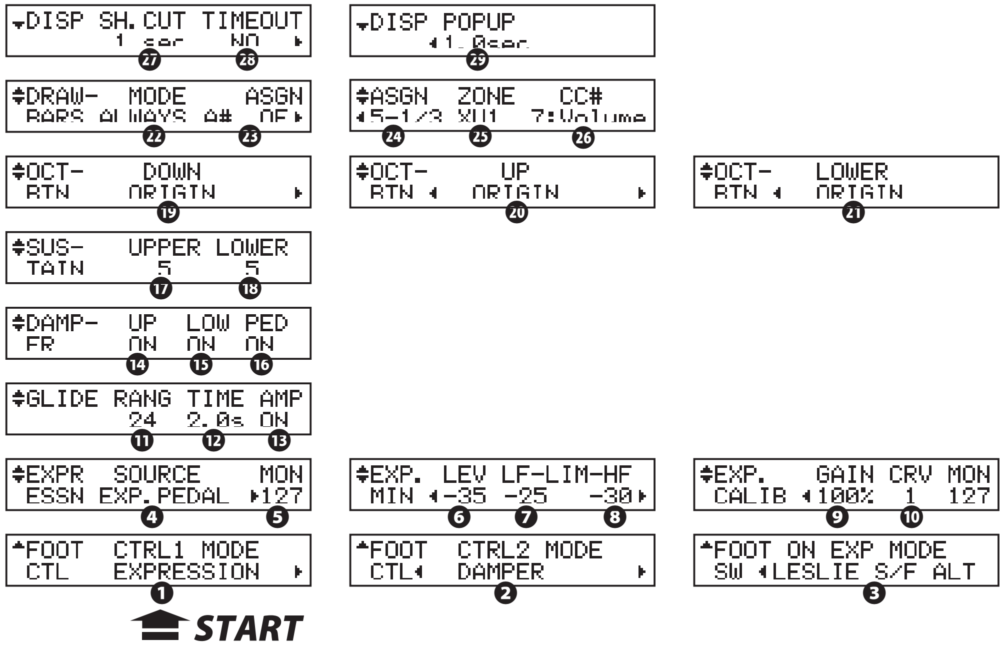
CONTROL Edit Menu

This Edit Menu allows you to select the parameters for the various controls that you prefer.

NOTE: Please insure that the Expression Pedal and Foot Switch are properly connected before adjusting their settings.

To locate this Menu, follow the steps below:


CONTROL
or,
MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▶ ▶ ▶
A DRAWBAR PATCH
TUNE CONTROL
ENTER


DISP SH.CUT TIMEOUT 1 sec NO ㉗ ㉘
DISP POPUP 1.0sec ㉙
DRAW- MODE ASGN BARS ALWAYS A# OF ㉒ ㉓
ASGN ZONE CC# 5-1/3 XU1 7:Volume ㉔ ㉕ ㉖
OCT- DOWN RTN ORIGIN ⑲
OCT- UP RTN ORIGIN ⑳
OCT- LOWER RTN ORIGIN ㉑
SUS- UPPER LOWER TAIN 5 5 ⑰ ⑱
DAMP- UP LOW PED ER ON ON ON ⑭ ⑮ ⑯
GLIDE RANG TIME AMP 24 2.0s ON ⑪ ⑫ ⑬
EXPR SOURCE MON ESSN EXP.PEDAL 127 ④ ⑤
EXP. LEV LF-LIM-HF MIN -35 -25 -30 ⑥ ⑦ ⑧
EXP. GAIN CRV MON CALIB 100% 1 127 ⑨ ⑩
FOOT CTRL1 MODE CTL EXPRESSION ①
FOOT CTRL2 MODE CTL DAMPER ②
FOOT ON EXP MODE SW LESLIE S/F ALT ③
START

◆ FOOT CONTROLLER

❶ FOOT CONTROLLER 1 - MODE

This allows you to select the function controlled by the device connected to the CTRL1 jack.

OFF: Does not function.

EXPRESSION:

Select this option when an Expression Pedal is connected.

The options below are for a connected Foot Switch.

LESLIE S/F ALT, MOM, TRI

Switches the Leslie Effect among Slow, Fast and Stop.

ALT - The Foot Switch switches 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.,.

MOM - The Foot Switch switches 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.

TRI - The Foot Switch switches 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:

The Foot Switch will bend the pitch. The amount of pitch bend is determined by a parameter setting.

PATCH FWD, REV:

Use the Foot Switch to move forward or backward through the Patches.

FAVORITE FWD, REV:

Use the Foot Switch to move forward or backward through the Patches.

SPRING:

The Foot Switch will add the sound of a spring-type Reverb unit being jostled.

DELAY TIME:

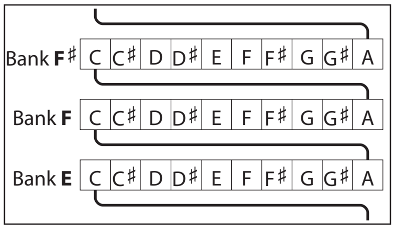
The Foot Switch will add the Delay effect. The delay time is set by the time interval of pressing the Foot Switch (page 92).

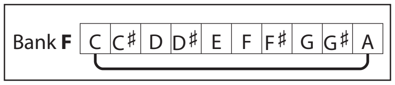
tips **PATCH/FAVORITE FWD/REV**

The [PRESET SELECTOR] Touch Buttons determine which part of the Patch/Favorite is selected by the Foot Switch

If both [PRESET SELECTOR] Touch Buttons are "ON," Preset Keys "C" through "A" will advance, after which the next Preset Bank starting with the "C" Preset Key Will advance. (see the diagram below).

If only the [LOWER] PRESET SELECTOR Touch Button is "ON," the Presets will advance from "C" to "A," then loop back to "C" again in the same Bank. (See the lower line of the diagram below.)


Bank F♯ C C♯ D D♯ E F F♯ G G♯ A
Bank F C C♯ D D♯ E F F♯ G G♯ A
Bank E C C♯ D D♯ E F F♯ G G♯ A


Bank F C C♯ D D♯ E F F♯ G G♯ A

DAMPER:
The Foot Switch will hold or "damp" notes while it is pressed.

SUSTAIN:
The Foot Switch will add a Sustain (key release) envelope to Manual Drawbar registrations.

PEDAL TO LOWER:
The Foot Switch will turn the Pedal To Lower coupler "ON" and "OFF.."

BASS 1C - BASS 3C
The Foot Switch will play a Pedal note from "1C" to " 3"C" or a span of 25 notes.

P. CHORD CLOSE, OPEN
Triggers the Prochord function, closed or opened voicing.

❷ FOOT CONTROLLER 2 - MODE (G)

This allows you to set the function controlled by the device connected to the CTRL 2 jack. The available options are the same for as "FOOT CONTROLLER" 1

❸ Foot Switch ON EXP. PEDAL - MODE (G)

This allows you to set the Foot Switch function for the Foot Switch on Hammond Expression Pedals EXP-100F and EXP-250.

◆ EXPRESSION

❹ EXPRESSION - SOURCE (G)

This allows you to set the source of Expression control.

EXP. PEDAL:	For using an Expression Pedal.
MIDI:	For using Expression information received at the UPPER Keyboard Channel.
BOTH:	Both sources above are received. The last value of each takes priority.

❺ EXPRESSION - MONITOR

This allows you to display the current Expression Value. "0" is minimum Expression (no audible sound) and "127" is maximum Expression. This can be a troubleshooting aid if you either don't hear any sound or can't change the volume using a connected Expression Pedal.

❻ EXPRESSION - MINIMUM LEVEL (G)

This allows you to set the volume at minimum expression.

The setting range is "OFF," "-40dB" to "0dB." At "OFF," the instrument is silent when the Expression Pedal is at minimum. The other values represent the lowest volume that will be heard at the Pedal's minimum position.

❼ EXPRESSION - LIMIT LOW FREQUENCY (G)

❽ EXPRESSION - LIMIT HIGH FREQUENCY (G)

This allows you to set the amount of Low or High Frequency to remain, when the Expression Pedal is set at minimum.

The setting range is "OFF," "-40dB" to "0dB." At "OFF" the sound totally disappears, but at other value points the set value is retained, even if the Expression Pedal is at minimum.

❾ EXPRESSION - GAIN (S)

This allows you to adjust the range of a connected Expression Pedal. You can select from "0" through "126%;" 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.

❿ EXPRESSION - CURVE (S)

This allows you to adjust the "curve," or change of expression value corresponding to the angle of the Expression Pedal when depressed. The figure on the right shows the options you may select.

NOTE: The parameters indicated (S) are System Parameters, and are common to all Patches.

◆ GLIDE

⓫ GLIDE - RANGE (P)

This allows you to set the bend range of pitch by semi-tone. Setting range is -24 to +12.

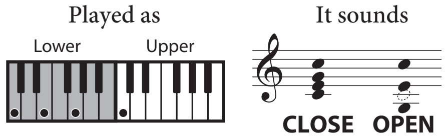
⓬ GLIDE - TIME (P)

This allows you to set the time from the start of glide to reach the pitch set at (11). The setting range is 0.1 to 5.0 seconds.

tips ProChord

ProChord™is a unique feature which allows you to play professional right-hand harmony while playing a single-note melody. The harmonization applied to the melody is determined by the chord played by the left hand.

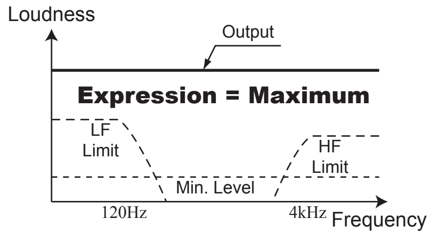
When notes or chords are played on a Lower Manual and a note is played on an Upper Manual, the note represented by the key played on the Upper Manual is heard along with a scored harmony pattern which sounds according to the Chord Root and Chord Type selected by the notes played on the Lower Manual. The Chord Root is the letter name of the chord (F, A, B=, etc) while the Chord Type is the denomination of the chord (Major, Minor, etc.)

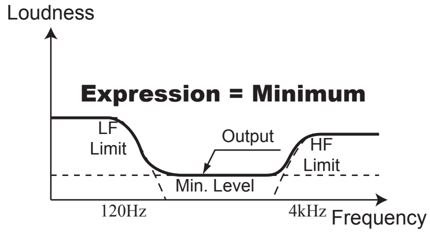


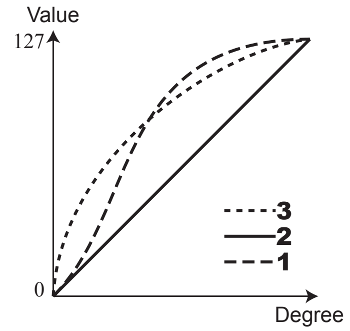
tips EXPRESSION LIMIT

One of the characteristics of the human ear is that, when volume decresases, high and low frequencies becomes difficult to hear.

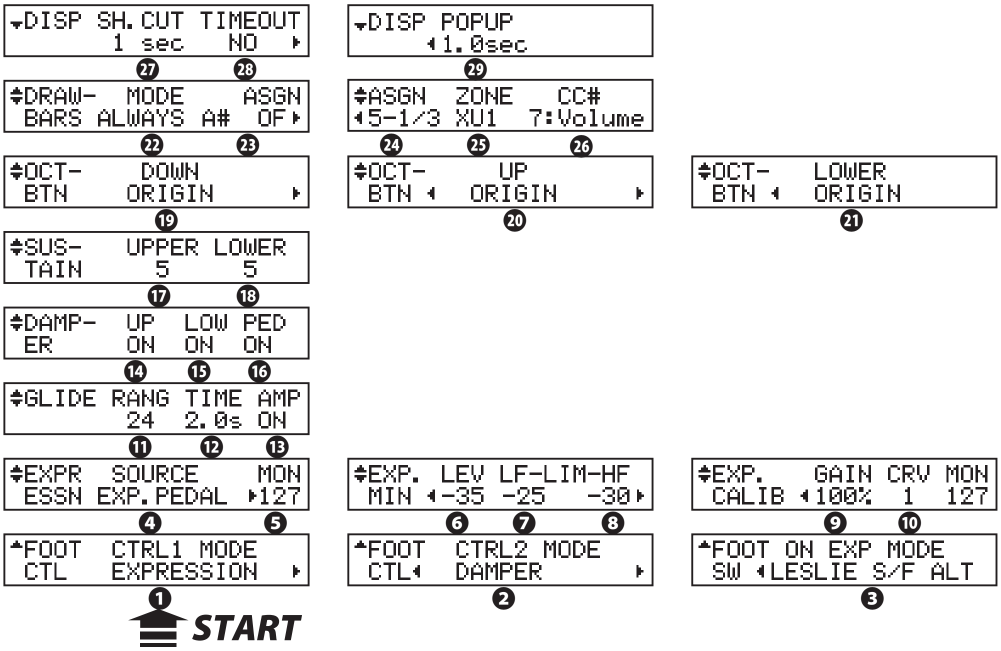
On the XK-5, compensation is applied to high and low frequencies so that they will appear to be at a contant level at low volume.







NOTE: The parameter indicated by (P) is a Patch Parameter, and can be recorded to each Patch. (G) indicates a Global Parameter, which is recorded upon being set and is common to all Patches.



DISP SH.CUT TIMEOUT 1 sec NO
㉗ ㉘
DISP POPUP 1.0sec
㉙
DRAW- MODE ASGN BARS ALWAYS A# OF
㉒ ㉓
ASGN ZONE CC# 5-1/3 XU1 7:Volume
㉔ ㉕ ㉖
OCT- DOWN BTN ORIGIN
⑲
OCT- UP BTN ORIGIN
⑳
OCT- LOWER BTN ORIGIN
㉑
SUS- UPPER LOWER TAIN 5 5
⑰ ⑱
DAMP- UP LOW PED ER ON ON ON
⑭ ⑮ ⑯
GLIDE RANG TIME AMP 24 2.0s ON
⑪ ⑫ ⑬
EXPR SOURCE MON ESSN EXP.PEDAL 127
④ ⑤
EXP. LEV LF-LIM-HF MIN -35 -25 -30
⑥ ⑦ ⑧
EXP. GAIN CRV MON CALIB 100% 1 127
⑨ ⑩
FOOT CTRL1 MODE CTL EXPRESSION
①
FOOT CTRL2 MODE CTL DAMPER
②
FOOT ON EXP MODE SW LESLIE S/F ALT
③
START

⑬ GLIDE - AMP (P)

Engages a "fade" along with the Glide, where the volume drops in tandem with the pitch to total silence.

◆ DAMPER

⑭, ⑮, ⑯, DAMPER - UPPER (G), LOWER(G), PEDAL(G)

Assigns the DAMPER to the various divisions of the this keyboard, when the function of the foot controller is set at "DAMPER."

tips DAMPER

On an acoustic piano, pressing the right-most pedal moves the felt dampers away from the strings, allowing them to sound continually until the notes fade away. The DAMPER feature replicates this effect.

◆ SUSTAIN

⑰, ⑱ SUSTAIN LENGTH - UPPER (P), LOWER(P)

This allows you to set the release rate for each Manual, when the foot controller is set at "SUSTAIN."

The setting range is "0" (short) to "5" (long).

NOTE: The Release Key-Click does not sound if the Sustain is set at "1" through "5."

tips SUSTAIN

On an organ, such as the XK-5, the word "SUSTAIN" refers to the amount of time a note continues to sound after a key is released. On a synthesizer this would be called "T4" or "Release."

◆ ASSIGN

⑲, ⑳, ㉑ OCTAVE TOUCH BUTTONS - DOWN (G), UP(G), LOWER(G)

This allows you to assign extra functions other than the original ones to the [OCTAVE] Touch Buttons.

ORIGIN:	Works according to the button's' original function.
LES STOP, LES FAST:	Duplicates the [LESLIE STOP], [LESLIE FAST] tabs.
VIB UPPER, VIB LOWER:	Duplicates the [VIBRATO UPPER], [VIBRATO LOWER] tabs.
GLIDE:	Activates the Glide function.
SPRING:	Produces the shock noise of the Spring Reverb.
DELAY TIME:	Sets the Delay Time (P. 92) by tapping the button at the desired speed. If the Touch Button is pressed and held, the Delay sound disappears.

◆ DRAWBARS

㉒ CONTROL MODE (S)

This allows you to determine how the Drawbars will function with the Preset Keys.

A♯/B

Each operation of the Drawbars for the "A♯" and "B" Preset Keys affects only the corresponding Adjust Presets.

When Preset Keys "C" -- "A" are selected, moving the Drawbars will have no effect.

ALWAYS A♯

The operation of the "B" Drawbar set is effective only when "B" Preset Key is selected. The "A#" Drawbar set can be uaed to change any selected Preset from "C" through "A."

NOTE: See the figure on the next page for more information about Drawbar Control Mode as well as Assignable Drawbars, which is explained on the next page.

㉓ ASSIGNABLE DRAWBARS (S)

This is for switching whether or not to assign special MIDI functions to the Lower Manual "B" Drawbar set.

OFF:	Normal function
ON::	Allows the "B" Drawbars to send MIDI messages to a connected MIDI device.

㉔ ASSIGN - FOOTAGE (S)

This allows you to select the functions to assign to specific Drawbars. Each Drawbar is indicated by its footage designation.

You can select the Drawbars to assign either by the [VALUE] Rotary Knob or by moving the Drawbar you wish to edit.

㉕ ASSIGN - EXTERNAL ZONE (G)

This allows you to set the External Zone corresponding with the Drawbar selected in step ㉔.

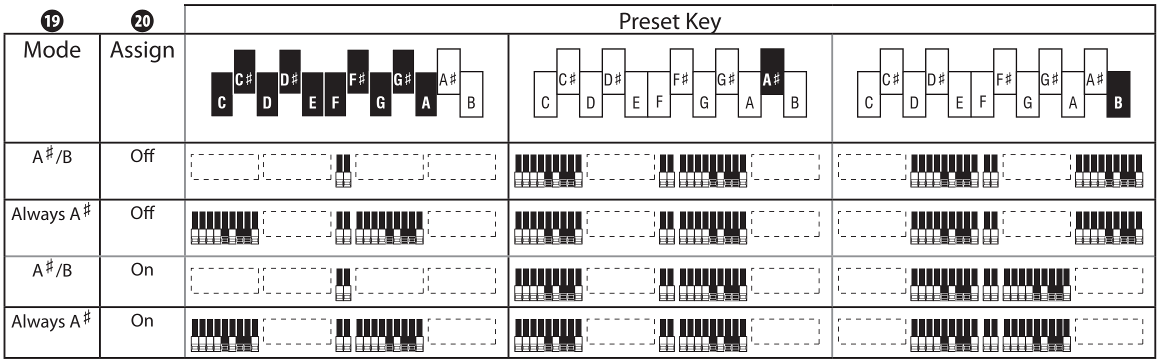
㉖ ASSIGN - CONTROL CHANGE NUMBER (G)

This allows you to set the Control Change number corresponding with the Drawbar selected in step ㉔.

The setting range is "1:MOD" -- "95:PHASER."

NOTE: The designation, "PHASER" refers to a MIDI Continuous Controller, not to the Phaser Multi-Effect.

◆ ACTIVE DRAWBARS-CONTROL MODE & ASSIGNABLE DRAWBARS


⑲
⑳
Preset Key
Mode
Assign
C C♯ D D♯ E F F♯ G G♯ A A♯ B
C C♯ D D♯ E F F♯ G G♯ A A♯ B
C C♯ D D♯ E F F♯ G G♯ A A♯ B
A♯/B
Off
Always A♯
Off
A♯/B
On
Always A♯
On

◆ DISPLAY

㉗ DISPLAY - SHORT CUT (G)

This allows you to set the short cut waiting time.

The setting range is "0" to "2" seconds. At "NO," the Shortcut feature is disabled.

㉘ DISPLAY - TIME OUT (G)

This allows you to set the time for returning to the previous mode from the mode displayed by the short cut operation.

The setting range is "4" to "16" seconds. At "NO," the screen will not return to the previous mode.

㉙ DISPLAY - POP UP (G)

This allows you to set the interval at which the Pop Up is displayed when you move the [OVERDRIVE], [EFFECT] and [REVERB] Rotary Knobs.

The setting range is "0.5" to "2" seconds. At "NO," no Pop Up is displayed.

NOTE: The parameter indicated by (P) is a Patch Parameter, and can be recorded to each Patch. (G) indicates a Global Parameter, which is recorded upon being set and is common to all Patches. For a complete listing of all Patch and Global Parameters, please consult the APPENDIX at the back of this Guide.

tips ASSIGNABLE DRAWBARS

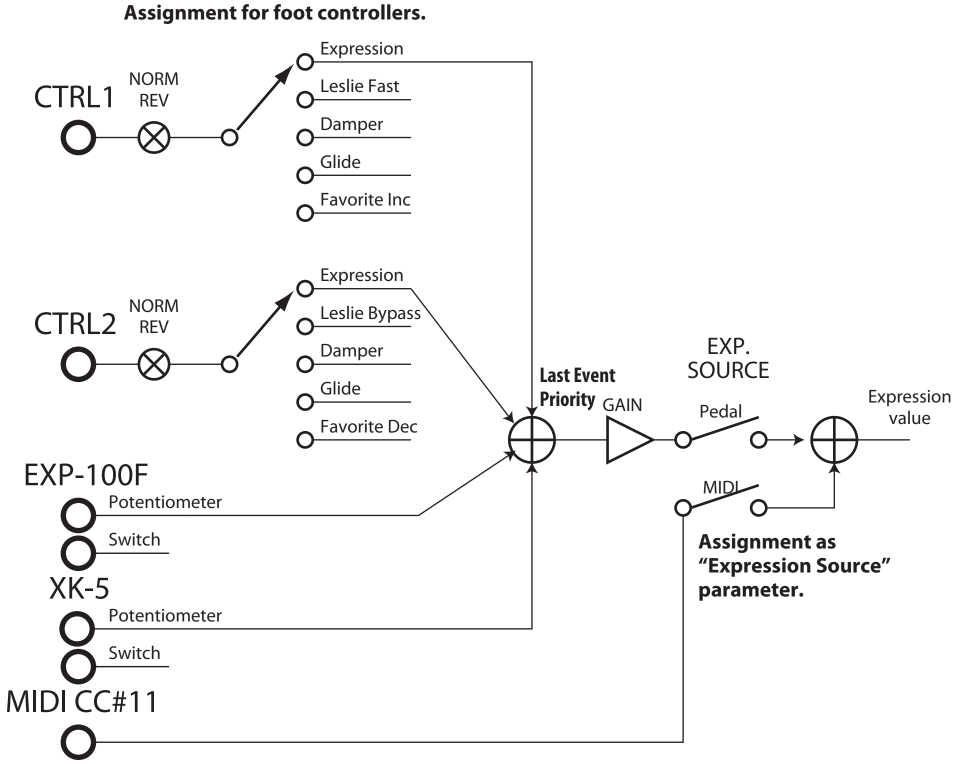
The XK-5 can control the external MIDI equipment using the External Zone (P. 137).
In that case, the function to use the LOWER "B" Drawbar set to send various control changes is called "ASSIGNABLE DRAWBAR."
The Lower Manual Drawbar registration is adjusted with the "A#" Drawbar set when the "B" Drawbar set is programmed as Assignable Drawbar.

Using EXPRESSION and LESLIE MODE

Expression and Leslie Mode can be operated by more than one control. Occasionally the status shown may be different from the actual status. For example, if you are using a CU-1 switch to control Leslie Mode, pressing one of the {LESLIE} tabs may result in a speed setting different from the CU-1 switch position.

On the XK-5, the last control used takes priority. (See "Last Event Priority" in the diagram below.)

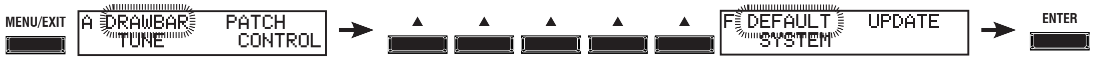
You can check the actual status of the Expression by using the EXPRESSION MONITOR in the CONTROL FUNCTION Mode and the status of the Leslie Mode by checking which of the [LESLIE] tabs is "ON" (LED lit).

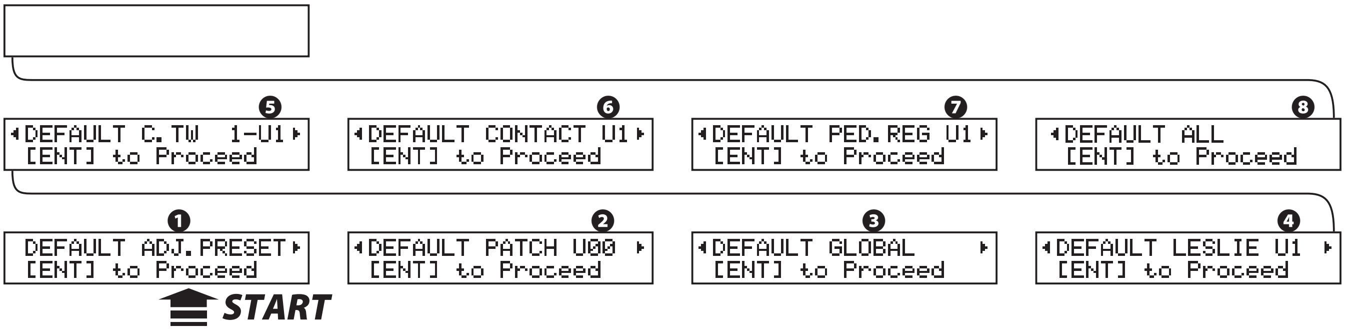

Assignment for foot controllers.
CTRL1
NORM
REV
Expression
Leslie Fast
Damper
Glide
Favorite Inc
CTRL2
NORM
REV
Expression
Leslie Bypass
Damper
Glide
Favorite Dec
EXP-100F
Potentiometer
Switch
XK-5
Potentiometer
Switch
MIDI CC#11
Last Event
Priority
GAIN
EXP.
SOURCE
Pedal
MIDI
Expression
value
Assignment as
"Expression Source"
parameter.

DEFAULT

This Edit Menu Menu allows you to reset the XK-5 to factory-default settings.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR TUNE PATCH CONTROL
F DEFAULT SYSTEM UPDATE
ENTER


⑤
◂DEFAULT C.TW 1-U1▸
[ENT] to Proceed
⑥
◂DEFAULT CONTACT U1▸
[ENT] to Proceed
⑦
◂DEFAULT PED.REG U1▸
[ENT] to Proceed
⑧
◂DEFAULT ALL
[ENT] to Proceed
①
DEFAULT ADJ.PRESET▸
[ENT] to Proceed
②
◂DEFAULT PATCH U00 ▸
[ENT] to Proceed
③
◂DEFAULT GLOBAL ▸
[ENT] to Proceed
④
◂DEFAULT LESLIE U1 ▸
[ENT] to Proceed
START

To initialize each parameter, select the parameter you want to initialize with the [◀][▶] Touch Buttons and press the [ENTER] Touch Button.

❶ ADJUST PRESET

This allows you to initialize the contents of the "A#" and "B" Preset Keys.

You can use this to create a "clean slate" for new Patch settings.

❷ PATCH

This allows you to initialize the contents of User Patches. Select the Patch you want to initialize with the [VALUE] Rotary Knob. The selecting range is U00 to U99 and ALL (All User Patches).

NOTE: This procedure will copy the contents of a Factory Patch into the User Patch of the same number.

❸ GLOBAL

This allows you to initialize Global Parameters such as Master Tune or Foot Switch assignment.

❹ CUSTOM LESLIE CABINETS

This allows you to initialize the contents of an internal Leslie Cabinet. Select the number you want to initialize with the [VALUE] Rotary Knob. The selecting range is U1 to U8 and ALL (All User Cabinets).

❺ CUSTOM TONE WHEELS

This allows you to initialize the contents of Custom Tone Wheels. Select the number you want to initialize with the [VALUE] Rotary Knob. The selecting range is shown as below and ALL (All Custom Tone Wheels).

A-U1: A-100, U1
A-U2: A-100, U2
A-U3: A-100, U3
B-U1: B-3, U1
C-U2: C-3, U1
M-U1: Mellow, U1

❻ CUSTOM CONTACTS

This allows you to initialize the contents of all Custom Contacts. Select the number you want to initialize with the [VALUE] Rotary Knob. The selecting range is U1 to U3 and ALL (All User Contacts).

❼ PEDAL REGISTRATION

This allows you to initialize the contents of all Pedal Sub Drawbars. Select the number you want to initialize with the [VALUE] Rotary Knob. The selecting range is U1 to U3 and ALL (All User Pedal Sub Drawbars).

❾ ALL

This allows you to initialize all parameters of the XK-5.

If any unstable condition occurs on the XK-5 system, initializing "all" will usually clear the problem.

NOTE: You can also initialize the entire instrument by doing the following:

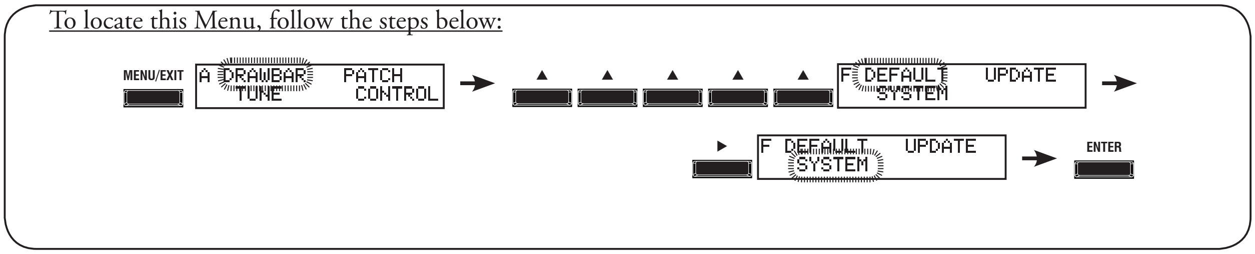
1. Press and Hold the [RECORD] Touch Button.

2. Turn the power to the instrument "ON."

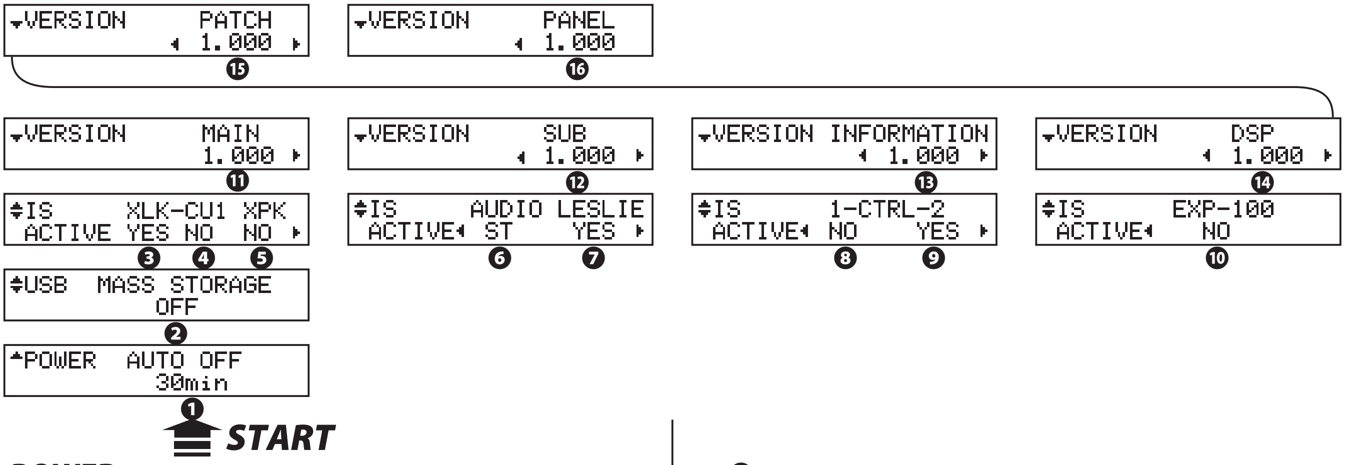
3. Release the [RECORD] Touch Button when the PLAY Mode screen appears.

SYSTEM Edit Menu

This Edit Menu allows you to set the System Parameters and to display the Software Version(s).


To locate this Menu, follow the steps below:

MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
F DEFAULT UPDATE
SYSTEM
F DEFAULT UPDATE
SYSTEM
ENTER


VERSION PATCH 1.000
⑮
VERSION PANEL 1.000
⑯
VERSION MAIN 1.000
⑪
VERSION SUB 1.000
⑫
VERSION INFORMATION 1.000
⑬
VERSION DSP 1.000
⑭
IS XLK-CU1 XPK
ACTIVE YES NO NO
③ ④ ⑤
IS AUDIO LESLIE
ACTIVE ST YES
⑥ ⑦
IS 1-CTRL-2
ACTIVE NO YES
⑧ ⑨
IS EXP-100
ACTIVE NO
⑩
USB MASS STORAGE
OFF
②
POWER AUTO OFF
30min
①
START

◆ POWER

❶ POWER - AUTO OFF

This allows you to set whether the power to the instrument IA automatically turned “OFF” after a certain time interval.

30min	The AC power to the instrument wil turn “OFF” is 30 minutes have elapsed with no keys or buttons being pressed.
DISABLE	The instrument will turn “ON” or “OFF” with the AC power switch, but not turn “OFF” automatically.

◆ USB

❷ MASS STORAGE

This allows you to determine how the USB TO HOST jack will function.

OFF	MIDI and audio data is received and transmitted.
ON	Use a storage device such as a USB Flash Drive or external hard drive.

◆ PERIPHERAL DEVICE

❸ IS ACTIVE - XLK

This shows whether the Lower Manual (e.g. XLK-5) is active over the H-BUS jack.

❹ IS ACTIVE - CU1

This shows whether a connected CU-1 unit (Leslie Speed switch) is active via the H-BUS connection.

❺ IS ACTIVE - XPK

This shows whether a Pedal Clavier (e.g. XPK-250) is active over the H-BUS jack.

❻ IS ACTIVE - AUDIO

This shows the status of the LINE OUT jacks.

ST	Stereo output - Both the L and R jacks are connected.
MONO	Mono output - Only the L/MONO jack is connected.

❼ IS ACTIVE - LESLIE

This shows whether a Leslie Speaker cabinet is connected via the LESLIE 11-pin jack.

❽ IS ACTIVE - FOOT CONTROLLER 1

This shows whether a device is connected to the FOOT CONTROLLER 1 jack.

❾ IS ACTIVE - FOOT CONTROLLER 2

This shows whether a device is connected to the FOOT CONTROLLER 2 jack.

❿ IS ACTIVE - EXP-100

This shows whether an EXP-100F Expression Pedal is connected.

NOTE: This jack is intended for the Hammond EXP-100F ONLY. Other devices will not be recognized.

◆ SOFTWARE VERSION

⓫ VERSION - MAIN PROGRAM

⓬ VERSION - SUB PROGRAM

⓭ VERSION - INFORMATION

⓮ VERSION - D. S. P. PROGRAM

⓯ VERSION - FACTORY PATCHES

⓰ VERSION - CONTROL PANEL

The above listings are the software modules for the various parts of the instrument. Use the [◀][▶] Touch Buttons to see the versions for each one.

MIDI/USB

WHAT IS "MIDI?"

MIDI is an acronym for **M**usical **I**nstrument **D**igital **I**nterface.

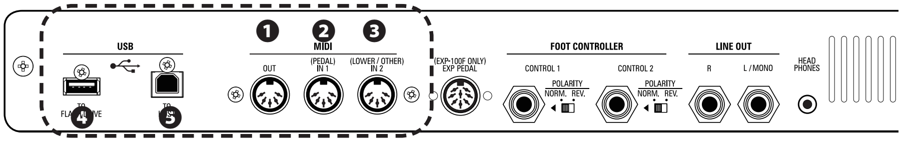
MIDI is the musical instrument industry standard for allowing electronic musical instruments to communicate with one another, as well as with other elctronic devices such as computers, sequencers, effects, lighting and sound reinforcement gear, etc. In addition, instruments made by different manufacturers to effectively communicate with each other.

Many types of data can be transmitted and received, including performance information, settings of parameters, and global commands.

WHAT IS "USB?"

USB is an acronym for **U**niversal **S**erial **B**us. It is an industry standard for allowing different types of electronic devices to exchange information. It is widely used on computers, musical instruments, smartphones, computer peripherals such as disk drives, printers, scanners, etc. The XK-5 has two USB ports - one Type "A" and one Type "B." The type"A" port is for connecting a USB Flash Drive, and the type "B" port is used to connect to a host device such as a computer.

MIDI/USB JACKS ON THE XK-5



❶ MIDI OUT PORT

This allows you to send MIDI information to an external device, or to record performances and controls to an external sequencer.

❷ MIDI IN 1 / PEDAL PORT

❸ MIDI IN 2 / OTHER PORT

These two jacks are used to control the XK-5 from external MIDI equipment.

❹ USB FLASH DRIVE PORT

This allows you to use a USB Flash Drive to store Setups, Patches, etc., or to upgrade the system software.

❺ USB TO HOST PORT

This allows you to connect to a computer.

WHAT MIDI CAN DO ON THE XK-5

On the XK-5, the MIDI ports are intended to do the following:

- Use a MIDI keyboard/Pedal Clavier to expand the versatility of play.
- Control an external sound generator such as a synthesizer or sampler.
- Record/playback the performance on an external sequencer or computer.

For easier access to those settings, the XK-5 is equipped with "MIDI Templates." These are explained more fully on the next page.

WHAT "USB TO HOST" CAN DO ON THE XK-5

On the XK-5, the USB TO HOST jack is intended to do the following:

- Sending / receiving MIDI data (Keyboard channel Upper, Lower, Pedal and system exclusive messages).
- Sending an analog audio stream the same as a LINE OUT jack. (See the paragraph below, "USB AUDIO CLASS 1.0")
- Sending / receiving Setup files.
- Sending / receiving the System files.

WHAT IS "USB AUDIO?"

"USB Audio" is a standard for allowing audio to be sent and received via a USB interface. The XK-5 complies with "USB AUDIO CLASS 1.0" meaning that when it is connected to a computer via USB, it can send and receive both MIDI data and an analog audio stream without having to install a proprietary device driver - "native support," in other words..

The Windows (Windows XP, Vista, 7, 8.1 and 10), Linux and OSX operating systems provide native support for USB Audio Class 1.0.

WHAT IS A "MIDI CHANNEL?"

MIDI information is transmitted and received along what are known as **MIDI Channels**.. These are simnilar in concept to television channels or radio stations. The MIDI standard allows up to 16 Channels to be transmitted using one MIDI cable.

The MIDI Channels must match between the transmitter and the receiver - in other words, if the an instrument is transmitting on MIDI Channel 1, the receiving instrument must also be set to receive on MIDI Channel 1. If not, the receiving instrument cannot "hear" what the transmitting instrument is "saying."

MAIN MIDI MESSAGE

The following MIDI information is transmitted along one of the 16 available MIDI Channels:

◆ CHANNEL MESSAGE

◆ NOTE ON/NOTE OFF/VELOCITY

This data tells which key is played (Note Number/Note On), at what intensity (Velocity) and when it is released (Note Off).

◆ PROGRAM CHANGE

Control Channel:

Changes the internal patches of the XK-5.

External Zone:

Transmits Program Change data out to a connected MIDI device.

◆ CONTROL CHANGE

Transmits and receives changes made to the playing controls of the XK-5, including all Organ Performance (Drawbars, Vibrato/Chorus, Percussion, Leslie, Expression), Foot Controls and External Zone MIDI Program and Controller changes.

◆ SYSTEM MESSAGE

◆ SYSTEM EXCLUSIVE MESSAGE

Transmits data unique to Hammond Products. This is done by means of a MIDI Dump, which transmits all unique Hammond information (**Sysx**) data to an external sequencer.

NOTE: More information can be found by consulting the MIDI Implementation Chart in the APPENDIX at the back of this Guide.

WHAT IS A "MIDI TEMPLATE?"

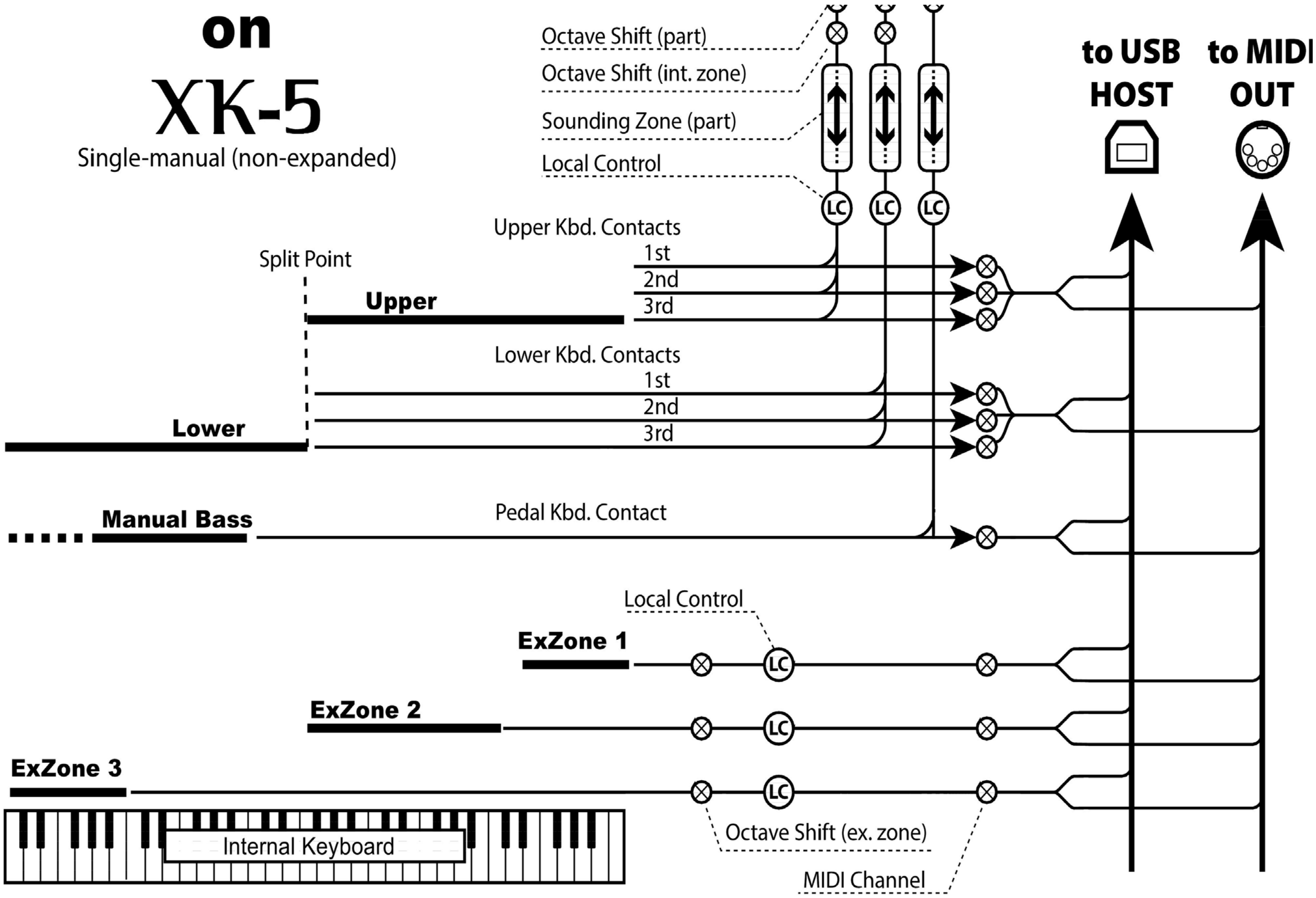
Because MIDI can be used with such a wide variety of devices - such as synthesizers, sound modules, sequencers, etc. - there are a number of features associated with MIDI, such as Program Change, Controller Change, etc., that allow each MIDI setup to be optimized for the best results in each application. However, making all of these settings manually can be quite time-consuming and error-prone.

Therefore, the XK-5 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**.

See page 135 (MIDI Edit Menu) for information on how to select the MIDI Template you want to use.

MIDI STRUCTURE

The XK-5 can transmit and receive MIDI data on **Keyboatd Channels** as well as transmit MIDI data on **External Zones**. The following diagram and the paragraphs below explain this in more detail.


on
XK-5
Single-manual (non-expanded)
Octave Shift (part)
Octave Shift (int. zone)
Sounding Zone (part)
Local Control
LC
to USB HOST
to MIDI OUT
Upper Kbd. Contacts
1st
2nd
3rd
Split Point
Upper
Lower Kbd. Contacts
1st
2nd
3rd
Lower
Manual Bass
Pedal Kbd. Contact
Local Control
ExZone 1
ExZone 2
ExZone 3
Internal Keyboard
Octave Shift (ex. zone)
MIDI Channel

◆ KEYBOARD CHANNELS

The Keyboard Channels are both MIDI IN and MIDI OUT - that is, they transmit MIDI information played on the Upper, and Lower Manuals and Pedal, and respond to incoming MIDI data as well. The Keyboard Channels are particularly useful for recording and playing back MIDI sequences

NOTE: The Upper Keyboard Channel transmits both Keyboard and Controller data.

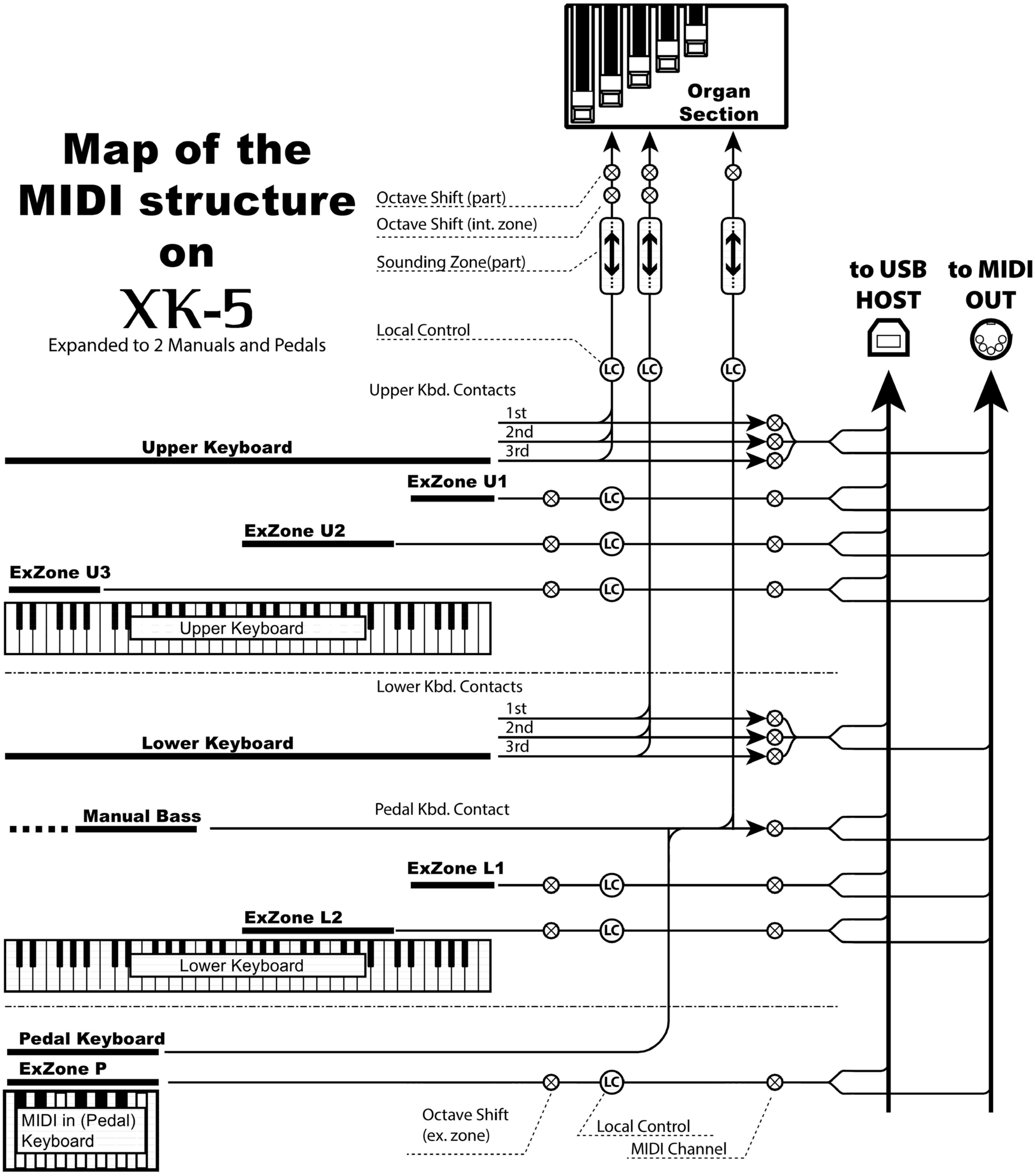
◆ EXTERNAL ZONE CHANNELS

The External Zones are MIDI OUT only - they do not respond to incoming MIDI data. These are useful if you wish to use the XK-5 as a Master Keyboard to control other MIDI devices such as synthesizers, sound modules, etc. The External Zones will transmit MIDI Note data, Program changes, Conreoller settings, etc. Since these are Patch Parameters, it is possible to save different settings to each Patch, thereby making control of external MIDI equipment easier.

There are 6 External Zones - 3 for the Upper, 2 for the Lower, and 1 for the Pedals.

Map of the MIDI structure on XK-5

Expanded to 2 Manuals and Pedals


Organ Section
Octave Shift (part)
Octave Shift (int. zone)
Sounding Zone(part)
Local Control
to USB HOST
to MIDI OUT
LC
Upper Kbd. Contacts
1st
2nd
3rd
Upper Keyboard
ExZone U1
ExZone U2
ExZone U3
Upper Keyboard
Lower Kbd. Contacts
1st
2nd
3rd
Lower Keyboard
Manual Bass
Pedal Kbd. Contact
ExZone L1
ExZone L2
Lower Keyboard
Pedal Keyboard
ExZone P
MIDI in (Pedal) Keyboard
Octave Shift (ex. zone)
Local Control
MIDI Channel

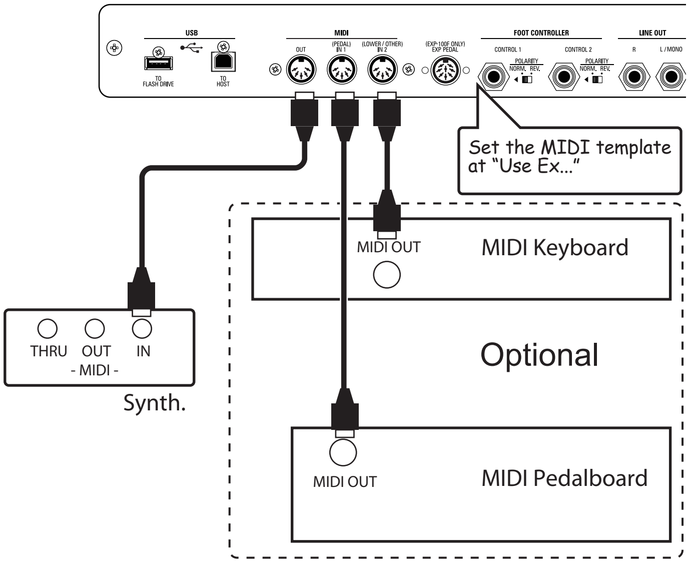
◆ EXPANDED KEYBOARDS

A Lower Manual and Pedal Clavier attached via MIDI can play the sounds from the XK-5 internal sound engine and can also transmit MIDI Data via the MIDI OUT jack using both Keyboard Channels and External Zones.

USING EXTERNAL MIDI EQUIPMENT

You can control external MIDI equipment with the XK-5, both as a single-manual and as an expanded instrument.

BASIC CONNECTION


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY NORM. REV.
LINE OUT
R
L / MONO
Set the MIDI template at "Use Ex..."
MIDI OUT
MIDI Keyboard
THRU OUT IN
- MIDI -
Synth.
Optional
MIDI OUT
MIDI Pedalboard

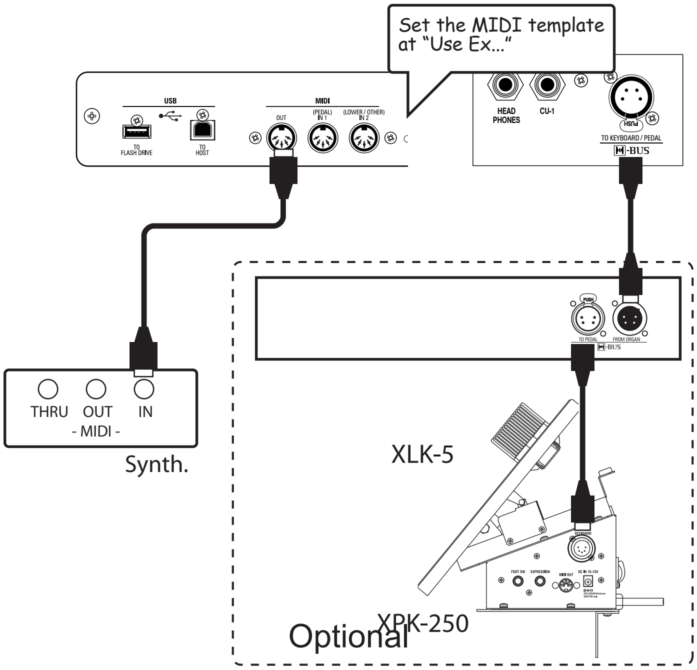
1. Connect the MIDI cables as shown in the figure at left

2. Go into the MIDI Edit Menu and select "Use.Ex,xxx" as a MIDI Template. See the next page for instructions on how to do this.

This template will silence the Keyboard Channels, but still allow MIDI OUT transmission via the External Zones.

3. Set the parameters for each Zone, and record your changes to a Patch if desired.

NOTE: See page 137 ("ZONE Edit Menu") for more information about setting Zone parameters.

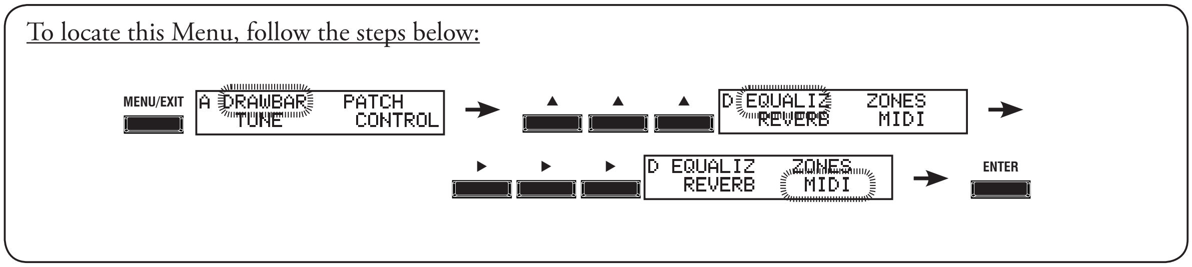

Set the MIDI template at "Use Ex..."
USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
HEAD PHONES
CU-1
PUSH
TO KEYBOARD / PEDAL
H-BUS
PUSH
TO PEDAL
FROM ORGAN
H-BUS
THRU OUT IN
- MIDI -
Synth.
XLK-5
XPK-250
Optional

Connect MIDI cables as shown in the figure at left if you are using an XLK-5 and XPK-250 as Lower Manual and Pedals.

NOTE: The External Zone sounds at a deeper point in the key travel than the Drawbar Tones, allowing for proper transmission of Velocity Data.

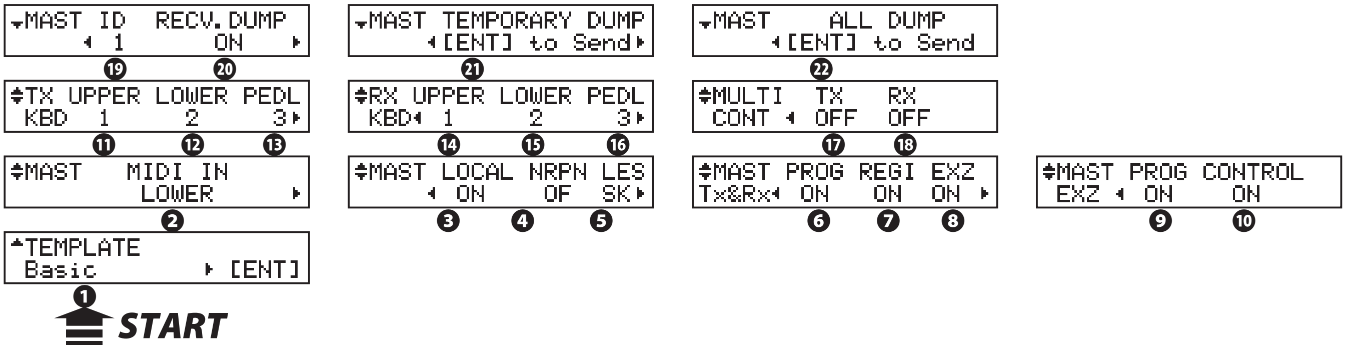
MIDI Edit Menu

This Edit Menu allows you to set the overall MIDI parameters for the instrument and and perform a MIDI Dump operation.



To locate this Menu, follow the steps below:

MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
D EQUALIZ ZONES
REVERB MIDI
D EQUALIZ ZONES
REVERB MIDI
ENTER



MAST ID RECV.DUMP
1 ON
MAST TEMPORARY DUMP
[ENT] to Send
MAST ALL DUMP
[ENT] to Send
TX UPPER LOWER PEDL
KBD 1 2 3
RX UPPER LOWER PEDL
KBD 1 2 3
MULTI TX RX
CONT OFF OFF
MAST MIDI IN
LOWER
MAST LOCAL NRPN LES
ON OF SK
MAST PROG REGI EXZ
Tx&Rx ON ON ON
MAST PROG CONTROL
EXZ ON ON
TEMPLATE
Basic [ENT]
⑲
⑳
㉑
㉒
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
①
START

◆ MIDI TEMPLATE

❶ MIDI TEMPLATE

This allows you to select the MIDI Template you want to use.

Use the [◀][▶] Touch Buttons to select the desired Template and press the [ENTER] Touch Button tp make your selection.

See "MIDI TEMPLATE" in the APPENDIX (P. 160) for the details of each MIDI Template.

◆ MASTER

❷ MIDI IN

This allows you to set the function of the MIDI IN LOWER/OTHER jack.

NOTE: The MIDI IN PEDAL jack is not affected by this parameter setting.

SEQUENCE:
Incoming MIDI data plays UPPER, LOWER and PEDAL parts, but is not retransmitted.

LOWER:
Incoming MIDI data plays the LOWER part and is retransmitted on MIDI Channel 12. The [SPLIT] Touch Button is ignored. The XK-5 works as UPPER.

UPPER:
Incoming MIDI data plays the PEDAL part and is retransmitted on MIDI Channel 11. The [SPLIT] Touch Button is ignored. The XK-5 works as LOWER.

❸ LOCAL

This allows you to switch Local Control ON/OFF.

ON: The XK-5 will play both its internal sounds and the sounds from a connected MIDI device. Incoming MIDI data on the Keyboard channels are used only for playing the internal sounds - they are not retransmitted.

OFF: The XK-5 will play only the sounds from a connected MIDI device and the internal sounds are silenced. Incoming MIDI data on the Keyboard Channels are re-sent by the External Zones.

❹ NRPN

This allows you to select whether to send NRPN (Non-Registered Parameter Number) data.

On the XK-5 NRPN is used for transmitting messages such as Drawbar Fold Back or Leslie ON. NRPN is transmitted through the UPPER channel.

When "ON," transmitted. When "OFF," not transmitted.

❺ LESLIE

This is for controlling how to send Leslie Parameters. The Leslie Parameters are sent on UPPER Channel.

XK: The Leslie Parameters are sent out as normal NRPN codes.

21: The Leslie Parameters are sent out as Leslie 21 series NRPN codes.

NOTE: When a Cabinet Number is selected (i.e. by Patch), the parameters are sent out also.

NOTE: This parameter will change automatically when a Leslie speaker is connected or disconnected via the 11-pin LESLIE jack.

❻ PROGRAM CHANGE

Turns Program Change "ON" or "OFF." When "ON," transmitted. When "OFF," not transmitted.

❼ DRAWBAR REGISTRATION

Turns current Drawbar settings "ON" "OFF." When "ON," transmitted. When "OFF," not transmitted.

❽ EXTERNAL ZONE - WHOLE

Turns transmission of all six External Zones "ON" or "OFF." When "ON," transmitted. When "OFF," not transmitted.

❾ EXTERNAL ZONE - PROGRAM CHANGE

This allows you to set the Program Change numbers and Bank Select settings for each External Zone.

❿ EXTERNAL ZONES - CONTROL CHANGE

Turns transmission of Volume and Pan parameters for each External Zone "ON" and "OFF."

Other parameters such as Note, Expression and Damper are set using the ZONES FUNCTION Mode.

◆ KEYBOARD CHANNEL

This allows you to select the MIDI channel for each Keyboard Channel. The setting range is 1 through 16 and OF. At OF, there is no transmission.

⓫ TX UPPER

This allows you to select the MIDI Channel on which the UPPER Keyboard Channel will transmit.

NOTE: The UPPER Keyboard Channel will transmit Note data, Controller data, and Leslie data.

⓬ TX LOWER

This allows you to select the MIDI Channel on which the LOWER Keyboard Channel will transmit.

⓭ TX PEDAL

This allows you to select the MIDI Channel on which the PEDAL Keyboard Channel will transmit.

⓮ RX UPPER

This allows you to select the MIDI Channel on which the UPPER Keyboard Channel will receive.

NOTE: The UPPER Keyboard Channel will receive Note data, Controller data, and Leslie data.

⓯ RX LOWER

This allows you to select the MIDI Channel on which the LOWER Keyboard Channel will transmit.

⓰ RX PEDAL

This allows you to select the MIDI Channel on which the PEDAL Keyboard Channel will transmit.

⓱ TX MULTI CONTACT

⓲ RX MULTI CONTACT

These parameters allow you to select whether the Multi-Contacts will transmit or receive MIDI data.

When "ON," each contact will transmit on the MIDI channels listed below regardless of the setting of the MIDI Channel patrameter.

Physical Contact	MIDI Channel
UPPER, First	1
UPPER, Second	2
UPPER, Third	3
LOWER, First	4
LOWER, Second	5
LOWER, Third	6
PEDAL, First	7

NOTE: To avoid confusion of MIDI signals, set each MIDI Channel for Keyboard Channels and External Zones to different numbers from the ones listed above.

◆ SYSTEM EXCLUSIVE MESSAGE

⓳ DEVICE ID

This allows you to set the Device ID when transmitting System Exclusive (Sysx) messages such as Memory Dump (#21, 22). Hammond's ID number is 55h.)

❿ RECEIVE DUMP

This allows you to turn reception of Memory Dump "ON" or "OFF."

On the XK-5, the total onboard memory can be transmitted as a Memory Dump, as Sysx messages. To prevent reception of Memory Dump data, turn this parameter "OFF."

⓫ TEMPORARY DUMP

This allows you to send a Memory Dump.

Pressing the [ENTER] Touch Button will transmit Patch Parameters, Global Parameters, System Parameters and the current setting of the controls. The contents of each Patch as well as Leslie Cabinets are not transmitted in this mode.

IMPORTANT: Recording a Temporary dump before you record a performance to an external sequencer avoids setting mismatching when the sequence is played back.

⓬ ALL DUMP

This allows you to send a Full Memory Dump.

Pressing the [ENTER] Touch Button in this mode, transmits all the settings through the MIDI OUT and USB TO HOST jack.

NOTE: Memory Dump data is transmitted through both the MIDI OUT and USB TO HOST ports.

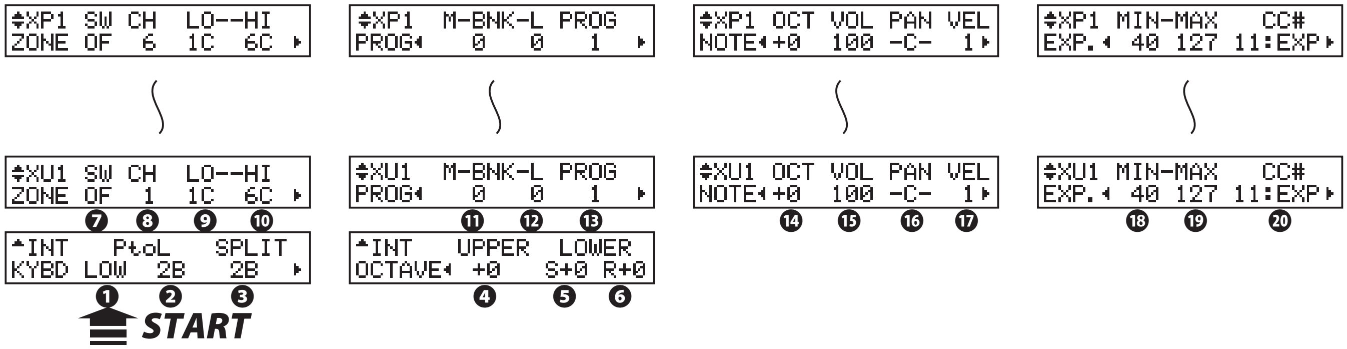
NOTE: None of these settings are Patche Parameters. They are recorded upon setting, and are common at all Patches.

WHAT ARE "ZONES?"

The External Zones allow you to use the XK-5 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 six (6) External Zones - three for the Upper Manual, two for the Lower Manual and one for the Pedals.

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. This Edit Menu allows you to determine how you want to control external MIDI equipment from the XK-5.



```
⇕XP1 SW CH  LO--HI      ⇕XP1  M-BNK-L PROG      ⇕XP1 OCT VOL PAN VEL     ⇕XP1 MIN-MAX   CC#
ZONE OF  6   1C  6C ▸   PROG◂   0   0    1 ▸    NOTE◂+0  100 -C-  1▸     EXP.◂ 40 127 11:EXP▸

⇕XU1 SW CH  LO--HI      ⇕XU1  M-BNK-L PROG      ⇕XU1 OCT VOL PAN VEL     ⇕XU1 MIN-MAX   CC#
ZONE OF  1   1C  6C ▸   PROG◂   0   0    1 ▸    NOTE◂+0  100 -C-  1▸     EXP.◂ 40 127 11:EXP▸

*INT    PtoL   SPLIT    *INT   UPPER   LOWER
KYBD LOW  2B    2B  ▸   OCTAVE◂ +0   S+0 R+0
```

◆ WHAT IS DISPLAYED ON THE UPPER LEFT?

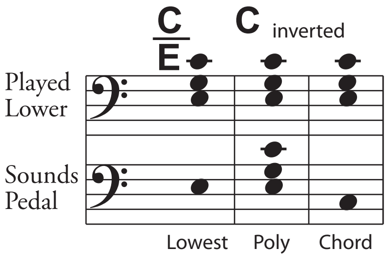
On the upper left of the Zones mode, the Zone to be operated is now displayed.

INT: Internal zone
XUn: External zone (Upper #n) 1 to 3
XLn: External Zone (Lower #n) 1 to 2
XPn: External Zone (Pedal #n) 1

◆ INTERNAL ZONE

① PEDAL TO LOWER - MODE

This allows you to set how the PEDAL TO LOWER works.



LOW: Sounds on lowest note if a chord is played.
CHRD: Sounds suitable bass note if a chord is played on Lower Manual.
POLY: Sounds up to 3 notes simultaneously if a chord played.

② PEDAL TO LOWER - LIMIT

This allows you to set the upper note limit for the PEDAL TO LOWER function.

③ SPLIT POINT

This allows you to set the upper note limit for the Lower Manual when SPLIT is active (P. 66).

④ OCTAVE - UPPER

This allows you to set the octave of the Upper Manual.

⑤ OCTAVE - LOWER on SPLIT

This allows you to set the octave of the area of the Manual to the left of the Split poinr when SPLIT is active.

⑥ OCTAVE - LOWER on REAL

This allows you to set the octave of a connected Lower Manual such as an XLK-5.

◆ EXTERNAL ZONE

⑦ SWITCH

This allows you to turn MIDI transmission "ON" or "OF" for the selected Zone.

⑧ MIDI CHANNEL

This allows you to set the MIDI Channel for the selected Zone.

⑨ ZONE - LOW

⑩ ZONE - HIGH

This allows you to set the upper and lower limits for the selected Zone.

Set the lower limit with LO and the upper limit with HI.

NOTE: Upper and Lower Zone limits can also be set by pressing the [RECORD] Touch Button while playing the desired note on the keyboard.

⑪ PROGRAM - BANK MSB

⑫ PROGRAM - BANK LSB

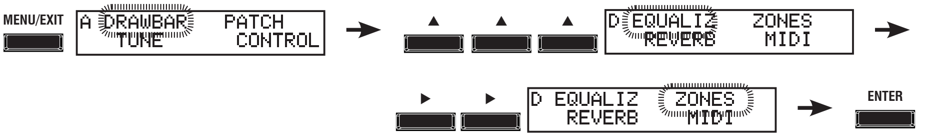
⑬ PROGRAM - PROGRAM CHANGE

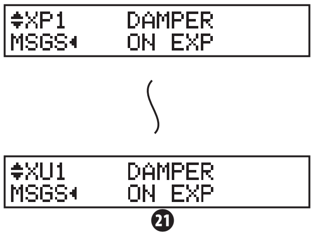
This allows you to set Bank Select and the Program Change for the selected Zone.

Generally, switching the tone of an external synthesizer or sampler is set by changing the Bank Select and the Program Change. Please consult the Owner's Manual of your MIDI equipment to obtain the proper settings for Bank and Program change.

You can select the Bank MSB and LSB At "0," to 127, the Program Change at 1 to 128.

To locate this Menu, follow the steps below:





⑭ NOTE - OCTAVE

This allows you to set the octave in which the selected Zone will sound. The setting range is -2 to +2.

⑮ NOTE - VOLUME

This allows you to set the volume (Control Change #7) of the selected Zone.

NOTE: if the "CC#" parameter is set at "VOL," this value will have no effect.

⑯ NOTE - PAN

This allows you to set the direction of the selected Zone. (Control Change #10).

⑰ NOTE - VELOCITY

This allows you to set the velocity curve of the selected 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).

⑱ EXPRESSION - MINIMUM

⑲ EXPRESSION - MAXIMUM

These allow you to set the range to "compress" the expression information to send to this zone.

In the XK-5 default mode, if the Expression Pedal is all the way closed, there is still a small amount of organ volume. If a MIDI sound module is used, the Expression Pedal will express all the way down to "zero." This is a parameter to balance the two.

The setting range is MIN At "0," to 63, MAX at 64 to 127.

⑳ EXPRESSION - CONTROL NUMBER

Some MIDI modules use Controller #7 to control volume while others use Controller #11 Expression. This parameter allows you to set the proper Controller number to regulate the Volume / Expression of connected MIDI equipment.

You can select 7: VOL, 11: EXP.

㉑ MESSAGE - DAMPER

This allows you to set which controller to transmit Damper information.

OFF:	No transmission.
CTRL1:	Transmits to the controller connected to the CTRL1 jack.
CTRL2:	Transmits to the controller connected to the CTRL2 jack.
ON EXP:	Transmits to the controller connected to the EXP jack.

NOTE: The parameters in these modes are Patch Parameters, and are recorded to each Patch.

◆ SWITCH ON/OFF THE MESSAGES

Some MIDI messages are specific to each Patch while others are Global messages. The following paragraphs explain this in more detail.

MIDI messages which can be switched Patch by Patch:
Note On, Note Off, Expression, Damper
MIDI messages which are switched globally:
Bank select, Program change, Volume, Pan (P. 135)

◆ MIDI ALL NOTES OFF AND RESET CONTROLLERS

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.

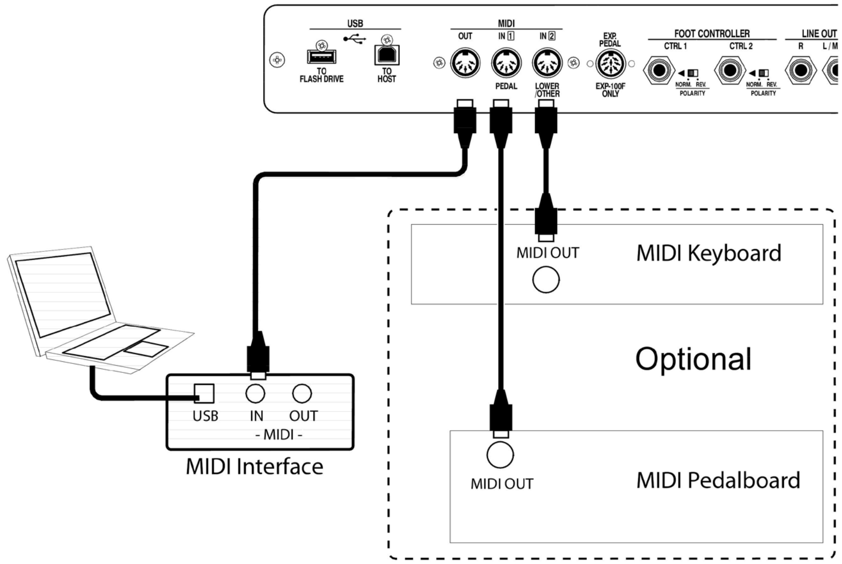
Once in a while, a Note Off command may not follow a Note On command, causing a note or notes to cipher, or sound continuously (the phenomenon popularly referred to a "stuck notes"). In this case, you need to send a MIDI command to the receiving instrument to clear the ciphering notes.

To do this, touch the [▲][▼] 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.

USING AN EXTERNAL SEQUENCER

This is to record and play back a performance by connecting an external sequencer or computer with DAW to the XK-5.

◆ Recording a performance to a Sequencer/DAW

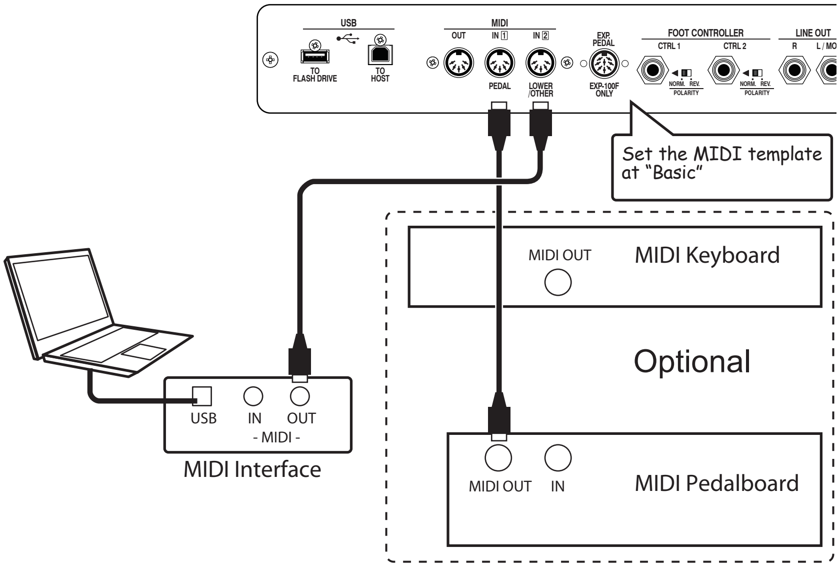

USB
MIDI
OUT
IN 1
IN 2
TO FLASH DRIVE
TO HOST
PEDAL
LOWER /OTHER
EXP. PEDAL
EXP-100F ONLY
FOOT CONTROLLER
CTRL 1
CTRL 2
NORM. REV.
POLARITY
LINE OUT
R
L / M
MIDI OUT
MIDI Keyboard
Optional
USB
IN
OUT
- MIDI -
MIDI Interface
MIDI OUT
MIDI Pedalboard

1. Make the connections as shown in the diagram at left.
2. Go into the MIDI Edit Menu and select the “Basic” MIDI Template (or the “2or3 KBD Template if you are using a Lower Manual and/or Pedal Clavier).
3. Set the MIDI channels of the sequencer / DAW.

NOTE: If you play only the Upper, MIDI Channel 1 will record. If play on Upper, Lower and Pedals, MIDI Channels 1, 2 and 3 will record.

4. Start recording of the sequencer/DAW.
5. Send the memory dump if necessary.
6. Start your performance.

◆ Sequencer playback

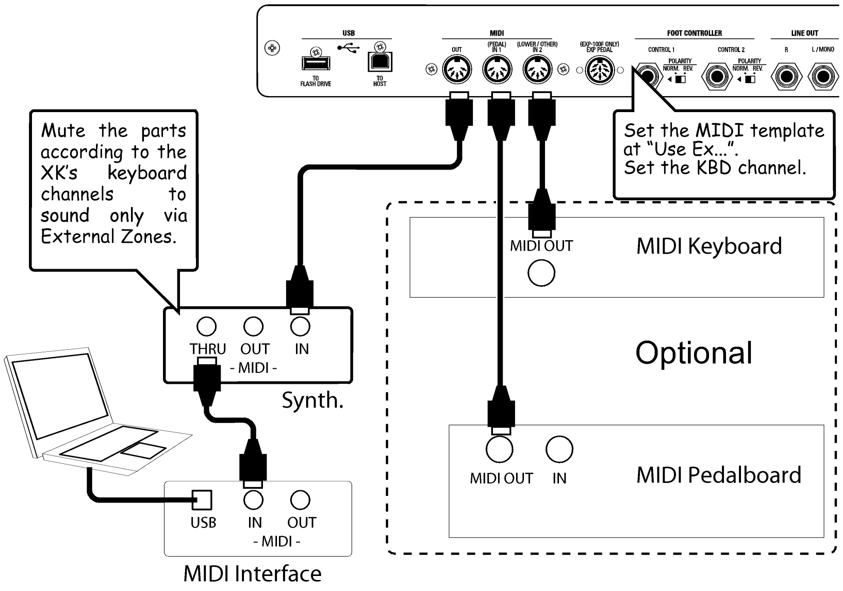

USB
MIDI
OUT
IN 1
IN 2
TO FLASH DRIVE
TO HOST
PEDAL
LOWER /OTHER
EXP. PEDAL
EXP-100F ONLY
FOOT CONTROLLER
CTRL 1
CTRL 2
NORM. REV.
POLARITY
LINE OUT
R
L / MO
Set the MIDI template at “Basic”
MIDI OUT
MIDI Keyboard
Optional
USB
IN
OUT
- MIDI -
MIDI Interface
MIDI OUT
IN
MIDI Pedalboard

1. Make the connections as shown in the diagram at left.
2. Go into the MIDI Edit Menu and select the “Basic” MIDI Template.
3. Start playback of the sequencer/DAW.

NOTE: Using MIDI cables requires different hookups for recording and playback if you are using the XK-5 with a Lower Manual and with Pedals. This is due to the limited number of MIDI ports on the XK-5.

RECORD AND PLAYBACK

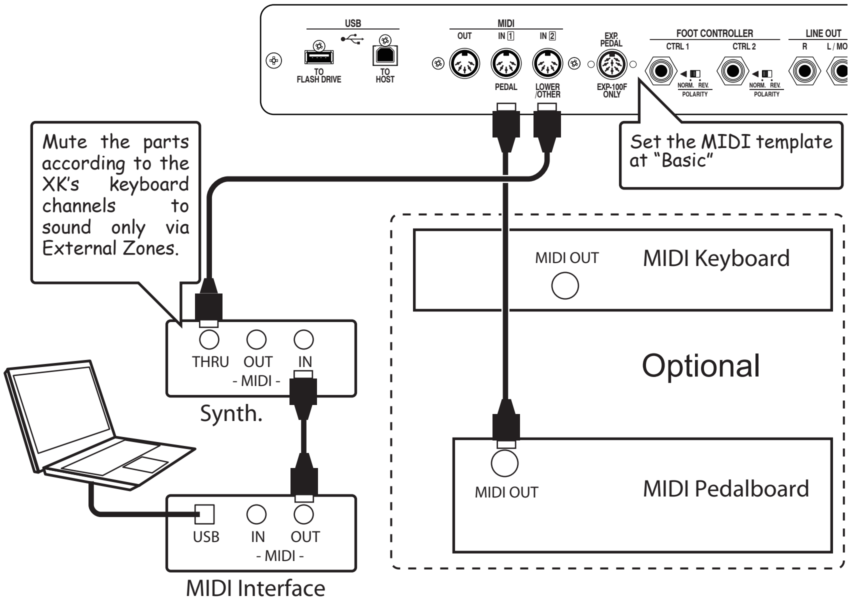
◆ Recording to a sequencer/DAW along with a synthesizer


USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
(EXP-100F ONLY) EXP PEDAL
FOOT CONTROLLER
CONTROL 1
CONTROL 2
POLARITY NORM. REV.
LINE OUT
R
L / MONO
Mute the parts according to the XK's keyboard channels to sound only via External Zones.
Set the MIDI template at "Use Ex...". Set the KBD channel.
MIDI OUT
MIDI Keyboard
Optional
THRU OUT IN - MIDI -
Synth.
MIDI OUT IN
MIDI Pedalboard
USB IN OUT - MIDI -
MIDI Interface

Set XK-5 LOCAL CONTROL to "ON." Set DAW LOCAL ECHO to "OFF."

1. Go into the MIDI Edit Menu and do the following:
    A. Select the "Use EX." MIDI Template.
    B. Manually turn the Keyboard Channels for Upper, Lower and Pedal "ON" for both Transmit (Tx) and Receive (Rx). This is necessary because selecting the "UseEx" MIDI Template automatically turns the Keyboard Channels "OFF."
2. Set the MIDI Channels of your synthesizer or module to recognize ONLY data being sent by the External Zones. Mute the MIDI Channels on which the Keyboard Channels are transmitting.
3. The sequencer/DAW records both Keyboard channels and External Zone channels.

◆ Playing back a performance

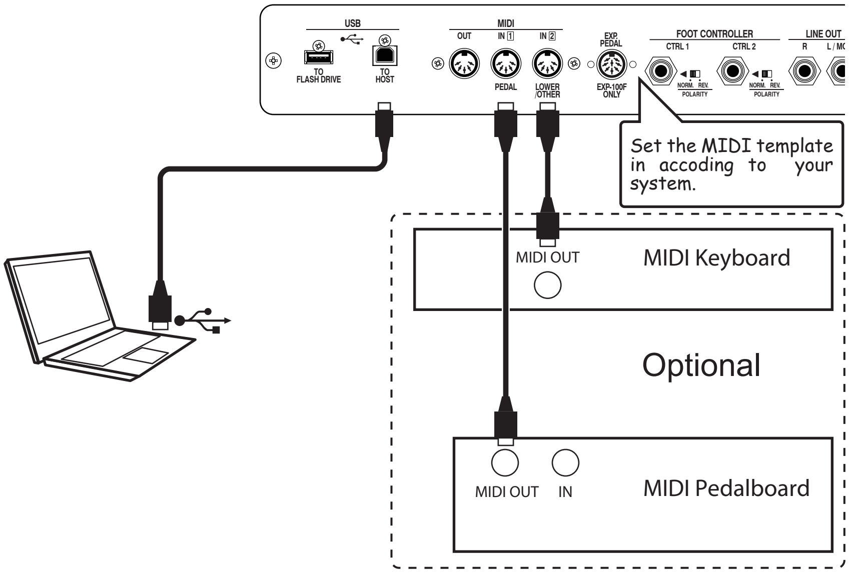

USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
IN 1
IN 2
PEDAL
LOWER /OTHER
EXP. PEDAL
EXP-100F ONLY
FOOT CONTROLLER
CTRL 1
CTRL 2
NORM. REV. POLARITY
LINE OUT
R
L / MO
Mute the parts according to the XK's keyboard channels to sound only via External Zones.
Set the MIDI template at "Basic"
MIDI OUT
MIDI Keyboard
Optional
THRU OUT IN - MIDI -
Synth.
MIDI OUT
MIDI Pedalboard
USB IN OUT - MIDI -
MIDI Interface

The sequencer/DAW will play back both Keyboard channels and External Zone channels.

The XK-5 sounds from the Keyboard Channels and the synthesizer sounds from the External Zone channels.

1. Go into the MIDI Edit Menu and select the "Basic" MIDI Template.
2. Set the MIDI Channels of your synthesizer or module to recognize ONLY data being sent by the External Zones. Mute the MIDI Channels on which the Keyboard Channels are transmitting.

◆ Recording a performance to a computer DAW over USB



Set the MIDI template in accoding to your system.

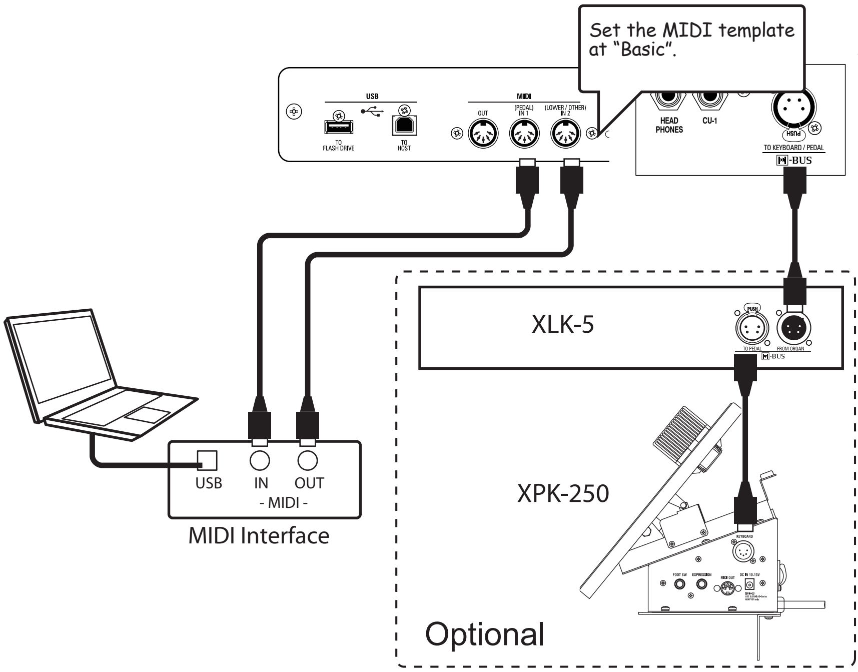
USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
IN 1
IN 2
PEDAL
LOWER /OTHER
EXP. PEDAL
EXP-100F ONLY
FOOT CONTROLLER
CTRL 1
CTRL 2
NORM. REV.
POLARITY
LINE OUT
R
L / MO
MIDI OUT
MIDI Keyboard
Optional
MIDI OUT
IN
MIDI Pedalboard

The XK-5 can transmit and receive MIDI data via USB. The diagram at right shows how this works.

Make the connections as shown in the diagram on the left.

By using a USB cable to connect the XK-5 to a computer, it is not necessary to change the connections between Record and Playback, as it is with MIDI cables.

◆ Recording a performance using the XLK-5 and XPK-250



Set the MIDI template at "Basic".

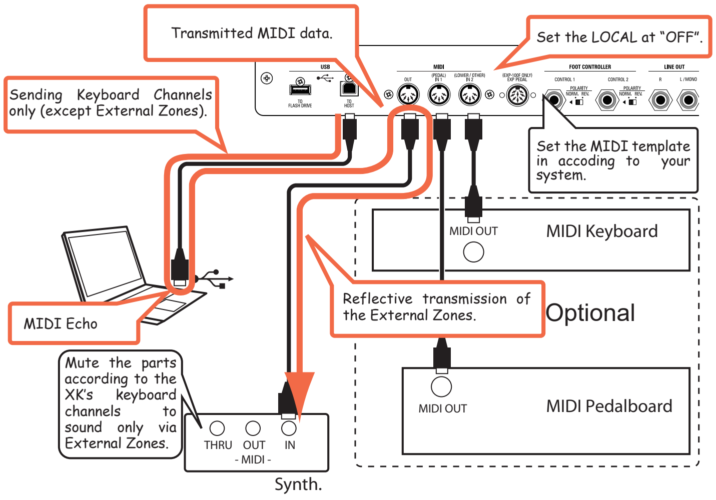
USB
TO FLASH DRIVE
TO HOST
MIDI
OUT
(PEDAL) IN 1
(LOWER / OTHER) IN 2
HEAD PHONES
CU-1
PUSH
TO KEYBOARD / PEDAL
-BUS
XLK-5
PUSH
TO PEDAL
FROM ORGAN
-BUS
XPK-250
USB
IN
OUT
- MIDI -
MIDI Interface
Optional

If you are using the XK-5 in conjunction with the XLK-5 Lower Manual and the XPK-250 Pedal Clavier, it is not necessary to change the connections between Record and Playback even if MIDI cables are used between the computer and the XK-5.

NOTE: This also applies if you have the A-3 or Heritage system.

◆ Recording a performance including External Zones over USB

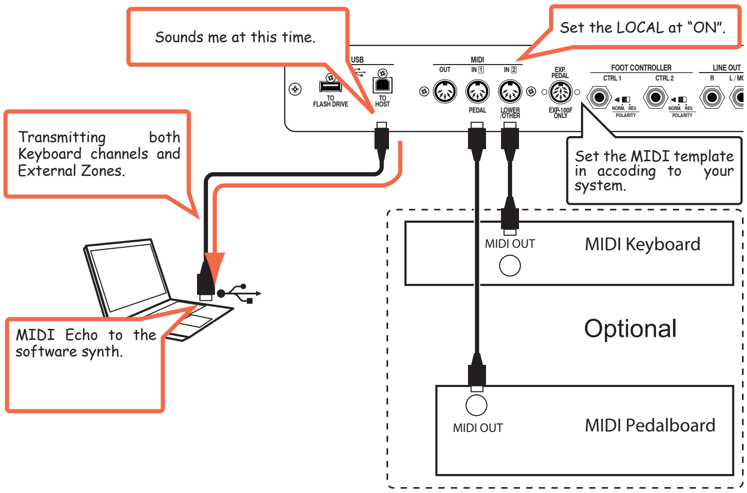
Record and Playback your performance with controlling the External Zones from / to the external sequencer via USB


Transmitted MIDI data.
Set the LOCAL at "OFF".
Sending Keyboard Channels only (except External Zones).
Set the MIDI template in accoding to your system.
MIDI OUT
MIDI Keyboard
MIDI Echo
Reflective transmission of the External Zones.
Optional
Mute the parts according to the XK's keyboard channels to sound only via External Zones.
THRU
OUT
IN
- MIDI -
Synth.
MIDI OUT
MIDI Pedalboard

The XK-5 can transmit and receive MIDI data via USB. The diagram at the left shows how this works.

With MIDI LOCAL CONTROL set to "OFF," receiving MIDI information on Keyboard channels is used as "local," and is transmitted on each External Zone.

1. Go into the MIDI Edit Menu and do the following:
   A. Set the MIDI Template at "Use Ex...."
   B. Manually turn the Keyboard Channels for Upper, Lower and Pedal "ON" for both Transmit (Tx) and Receive (Rx). This is necessary because selecting the "UseEx" MIDI Template automatically turns the Keyboard Channels "OFF."
   C. Set MIDI LOCAL CONTROL to "OFF."
2. After doing the above set MIDI Echo of the sequencer/DAW at "ON."
3. Set the MIDI Channels of your synthesizer or module to recognize ONLY data being sent by the External Zones. Mute the MIDI Channels on which the Keyboard Channels are transmitting.
4. Record on the sequencer/DAW ONLY the Keyboard Channels.


Sounds me at this time.
Set the LOCAL at "ON".
Transmitting both Keyboard channels and External Zones.
Set the MIDI template in accoding to your system.
MIDI OUT
MIDI Keyboard
Optional
MIDI Echo to the software synth.
MIDI OUT
MIDI Pedalboard

If the synthesizer which you wish to control via External Zones is in the computer, set MIDI LOCAL CONTROL on the XK-5 to "ON."

The performance information will sent the External Zones with switched "ON" the local control.

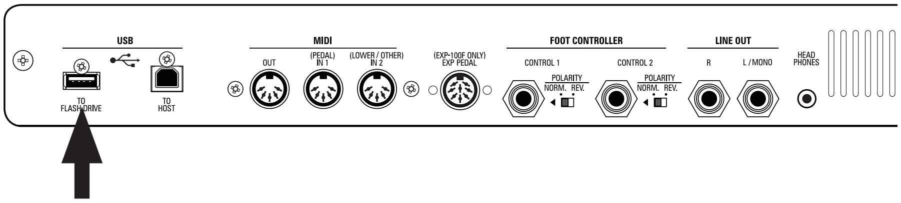
1. Go into the MIDI Edit Menu and do the following:
   A. Set the MIDI Template at "Use Ex...."
   B. Manually turn the Keyboard Channels for Upper, Lower and Pedal "ON" for both Transmit (Tx) and Receive (Rx). This is necessary because selecting the "UseEx" MIDI Template automatically turns the Keyboard Channels "OFF."
   C. Set MIDI LOCAL CONTROL to "ON."
2. After doing the above set MIDI Echo of the sequencer/DAW at "ON"so that the software synthesizer will sound.
3. Record on the sequencer/DAW BOTH Keyboard Channels and External Zones.

USING
THE
USB
PORTS

USING THE USB PORTS

As explained in previous sections of this Guide, the XK-5 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 of your custom settings each time you play.

The XK-5 gives you the ability to save Setups either to the Internal Memory of the instrument itself or to a USB Flash Drive.



Use the Type "A" USB port to insert a USB Flash Drive.

WHAT YOU CAN DO WITH A USB FLASH DRIVE

- Saving / Restoring Setups. (Each Setup file consumes 32Kbytes of memory.)
- Saving / Restoring Patches.

NOTE: One USB Flash Drive can save up to 99 Setup files and up to 99 Patches.

ABOUT USB FLASH DRIVES

◆ COMPATIBLE USB FLASH DRIVE

Due to the great variety of USB Flash Drives available, be sure to select one which is compatible with the XK-5. Consult our web site about compatible USB Flash Drives.

in the USA: http://www.hammondorganco.com
in Europe: http://www.hammond.eu

◆ CONNECTING A USB FLASH DRIVE

1. Insert the USB flash drive facing the correct direction, matching the upper side of it to that of the XK-5.
2. Do not remove the USB Flash Drive or switch OFF the power while accessing data (= while the "Please wait." is displayed). Data may be damaged.

◆ FOLDER STRUCTURE

When the XK-5 formats a USB Flash Drive, the following folders are automatically created on the drive:

1. **hammond** - the Root folder
2. **xk5** - inside the Root folder.
3. **setup** and **system** . inside the **xk5** folder.

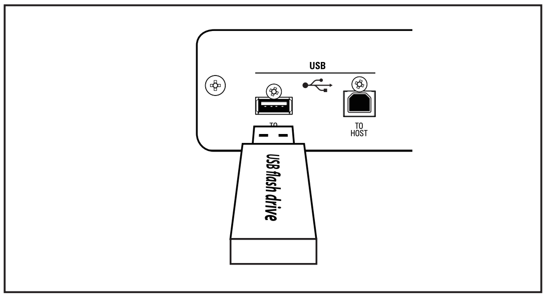
setup - The setup files are saved here.

system - System files to update the XK-5 software are copied here.

FORMATTING A USB FLASH DRIVE

To format a USB Flash Drive for use with the XK-5, do the following:

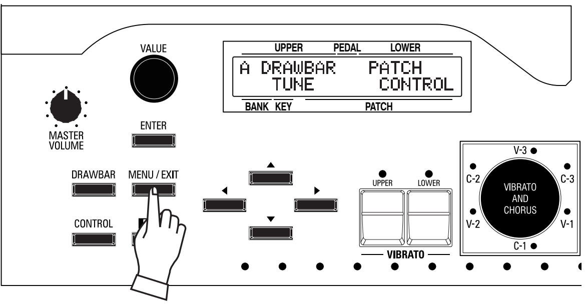
①


USB
TO
TO HOST
USB flash drive

Insert the USB flash drive to the USB "B" port.

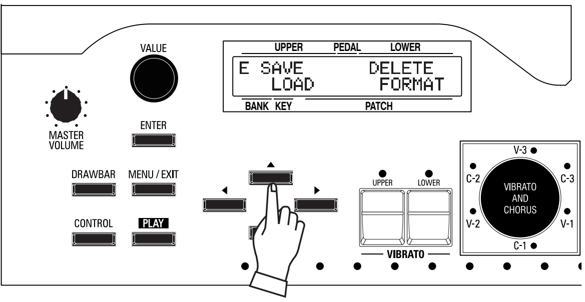
Wait until the display "`Confirming USB. Please wait...`" disappears.

②


A DRAWBAR PATCH
TUNE CONTROL
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

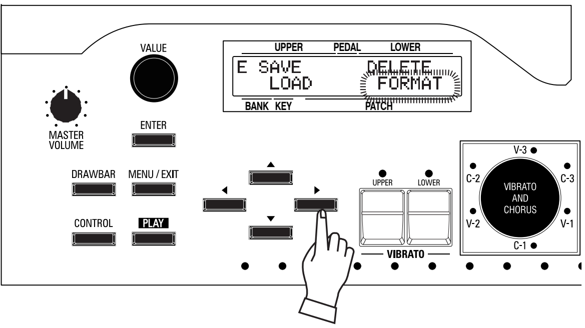
Press the [MENU/EXIT] Touch Button to display the Menu.

③


E SAVE DELETE
LOAD FORMAT
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

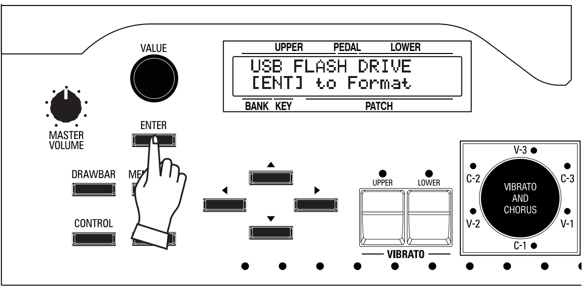
Press the [▲] Touch Button four times to display the E Menu.

④


E SAVE DELETE
LOAD FORMAT
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

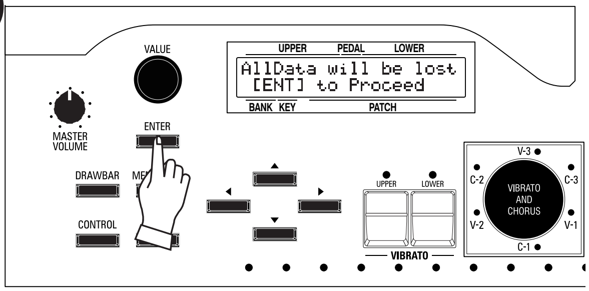
Press the [▶] Touch Button 3 times so that [FORMAT] blinks.

⑤


USB FLASH DRIVE
[ENT] to Format
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

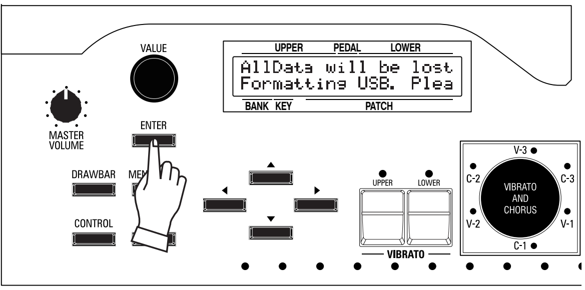
Press the [ENTER] Touch Button. You will see the screen shown above.

⑥


AllData will be lost
[ENT] to Proceed
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

Press the [ENTER] Touch Button. 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, touch either the MENU/EXIT or PLAY Touch Buttons.

⑦


AllData will be lost
Formatting USB. Plea
VALUE
UPPER
PEDAL
LOWER
BANK KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
V-3
C-2
C-3
VIBRATO AND CHORUS
V-2
V-1
C-1
VIBRATO

If you wish to format the USB Flash Drive, press the [ENTER] Touch Button. After approximately 3 seconds, the USB Flash Drive will be formatted and ready for use.

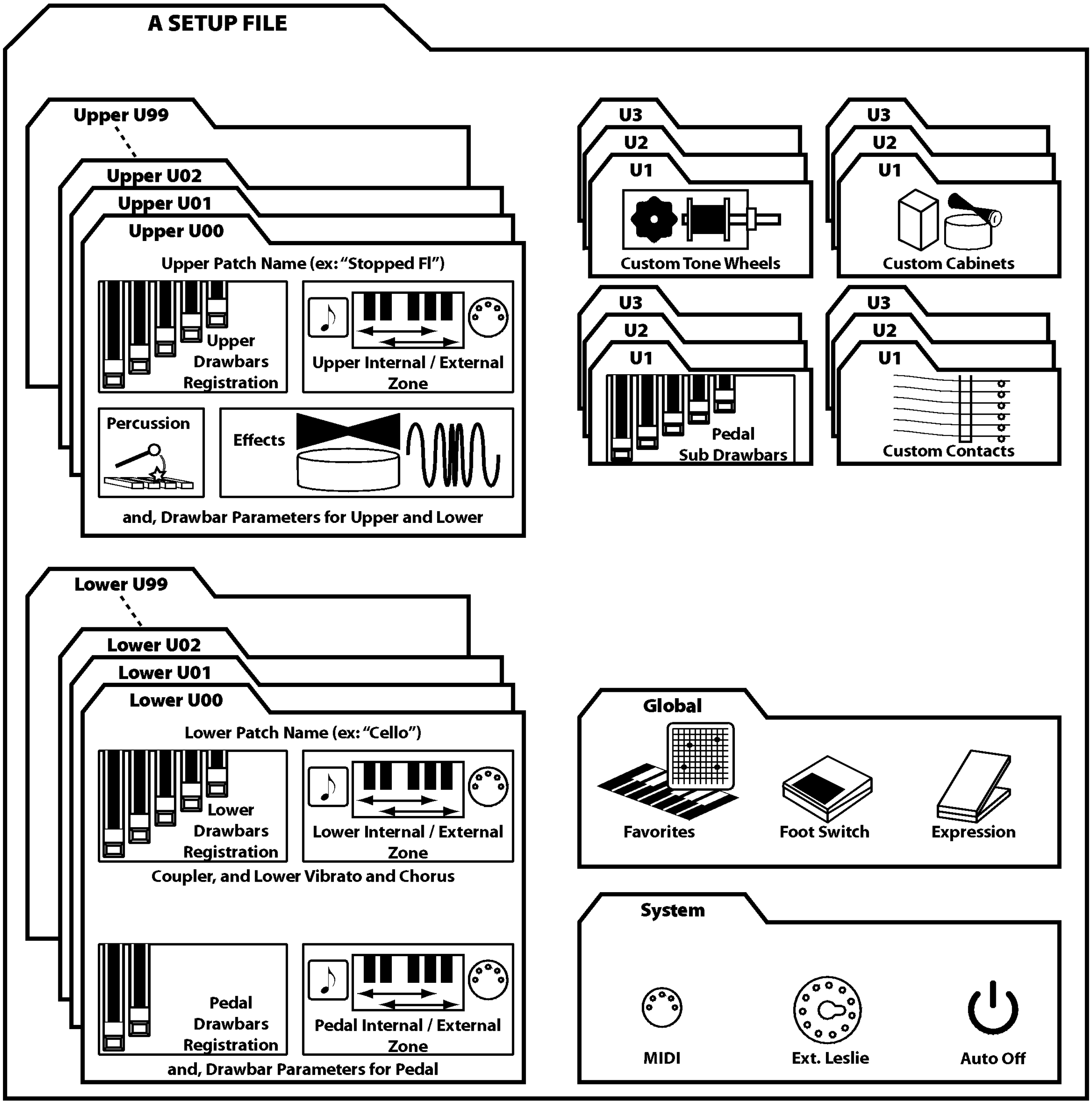
NOTE: Do NOT use this USB drive for anything other than your XK-5.

⑧

Press the [PLAY] Touch Button to return to PLAY Mode.

SETUP FILES

As explained elsewhere in this Manual, the XK-5 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. The figure below shows the data which can be contained in a Setup file.

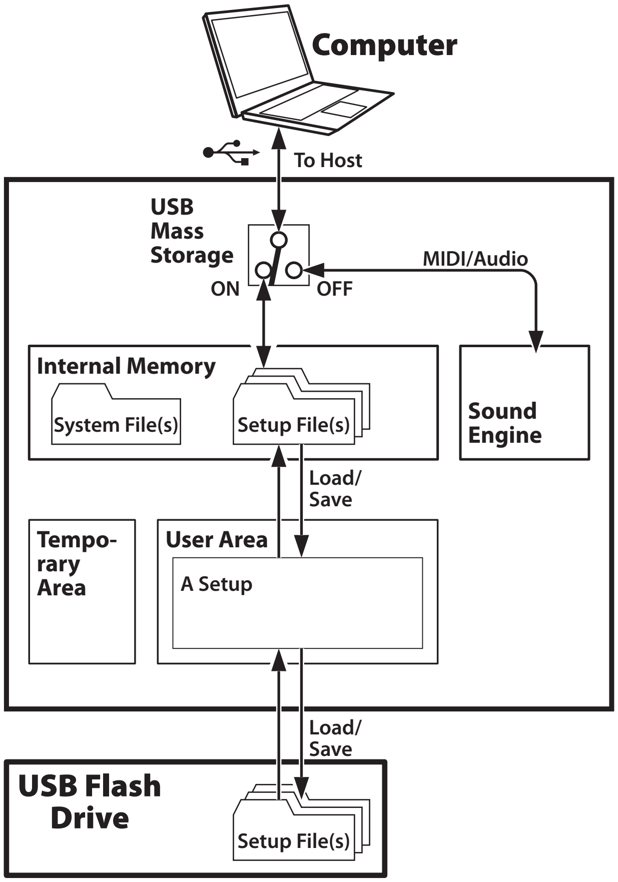

A SETUP FILE
Upper U99
Upper U02
Upper U01
Upper U00
Upper Patch Name (ex: "Stopped Fl")
Upper Drawbars Registration
Upper Internal / External Zone
Percussion
Effects
and, Drawbar Parameters for Upper and Lower
U3
U2
U1
Custom Tone Wheels
Custom Cabinets
Pedal Sub Drawbars
Custom Contacts
Lower U99
Lower U02
Lower U01
Lower U00
Lower Patch Name (ex: "Cello")
Lower Drawbars Registration
Lower Internal / External Zone
Coupler, and Lower Vibrato and Chorus
Pedal Drawbars Registration
Pedal Internal / External Zone
and, Drawbar Parameters for Pedal
Global
Favorites
Foot Switch
Expression
System
MIDI
Ext. Leslie
Auto Off

NOTE: All the data shown above is saved at once into a single Setup file. However, you can choose which part of a Setup you want to load - Custom Tone Wheel, a Patch etc.

WHAT IS "USB MASS-STORAGE?"

This unit has, in addition to the USB Flash Drive, a built-in "INTERNAL MEMORY" for saving Setup Files.

The Internal Memory can function identically with a USB Flash Drive - that is, it can save and load data, as well as exchange files with a computer via the USB connection. This is known as "USB Mass-Storage," or transferring a large amount of data to a storage device via USB.


Computer
To Host
USB Mass Storage
ON
OFF
MIDI/Audio
Internal Memory
System File(s)
Setup File(s)
Sound Engine
Load/ Save
Tempo-rary Area
User Area
A Setup
Load/ Save
USB Flash Drive
Setup File(s)

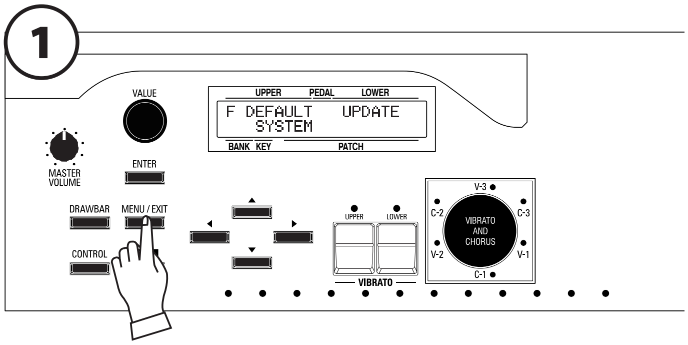
SWITCHING THE FUNCTION OF THE USB TO HOST JACK

The USB TO HOST jack is usually used for transmitting and receiving MIDI and Audio Stream information to the computer.

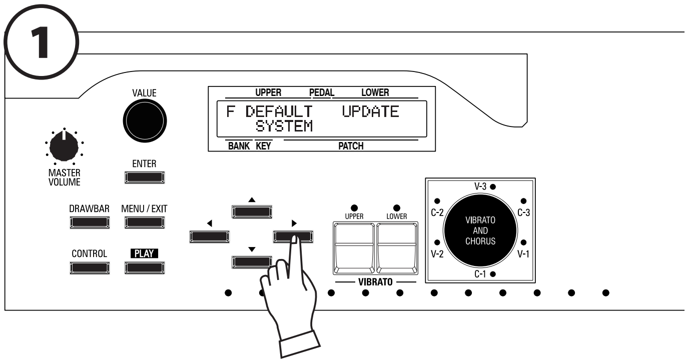
To transfer or exchange files from the Internal Memory to a computer, turn USB MASS STORAGE "ON." (See the left illustration.)

NOTE: You cannot transmit MIDI or Audio data while you are using USB MASS STORAGE.

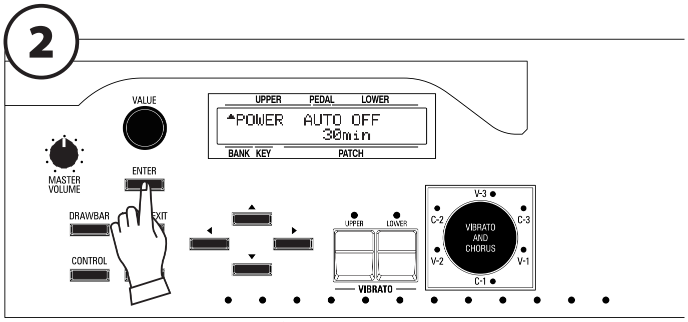
To switch the function of the USB TO HOST jack, do the following:


1
VALUE
UPPER PEDAL LOWER
F DEFAULT UPDATE
SYSTEM
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

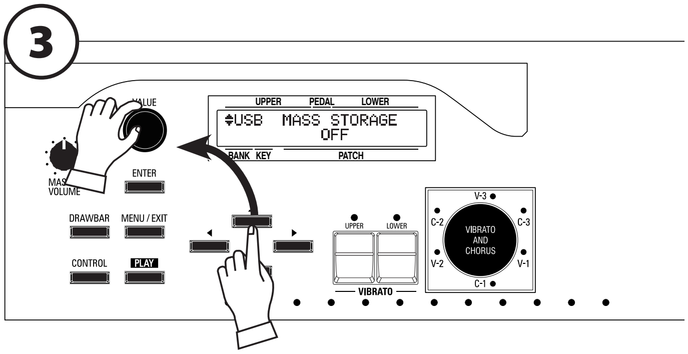
Press the [MENU/EXIT] to display the MENU Mode, then press the [▲] Touch Button five times to access the F Menu.


1
VALUE
UPPER PEDAL LOWER
F DEFAULT UPDATE
SYSTEM
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Press the [▶] Touch Button twice to select SYSTEM.


2
VALUE
UPPER PEDAL LOWER
▲POWER AUTO OFF
30min
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

Press the [ENTER] Touch Button to enter SYSTEM FUNCTION Mode.


3
VALUE
UPPER PEDAL LOWER
♦USB MASS STORAGE
OFF
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3 C-2 C-3 V-2 V-1 C-1
VIBRATO AND CHORUS

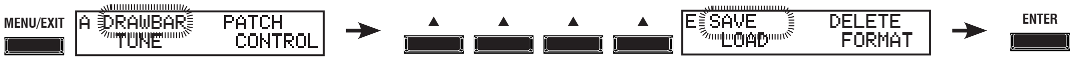
Press the [▲] Touch Button once. You will see the screen shown above.

Use the [VALUE] Rotary Knob to turn USB MASS STORAGE "ON" or "OFF."

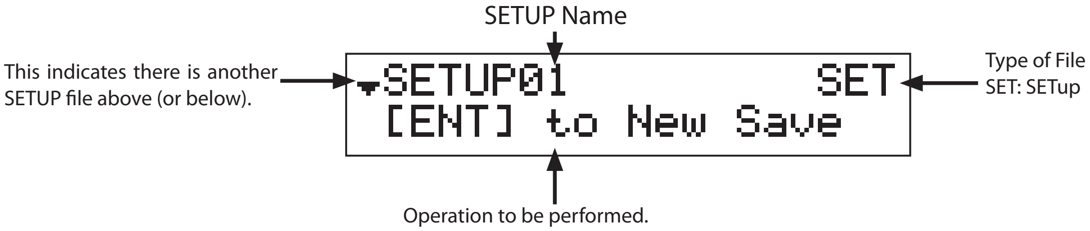
SAVE Edit Menu

This Edit Menu allows you to save a Setup file either from a USB Flash Drive or the Internal Memory.

To locate this Menu, follow the steps below:

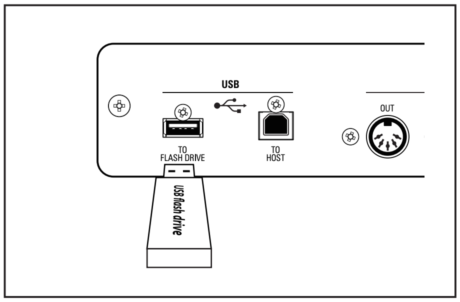

MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲
▲
▲
▲
E SAVE DELETE
LOAD FORMAT
ENTER

HOW TO READ THE DISPLAY


SETUP Name
This indicates there is another SETUP file above (or below).
SETUP01 SET
[ENT] to New Save
Type of File
SET: SETup
Operation to be performed.

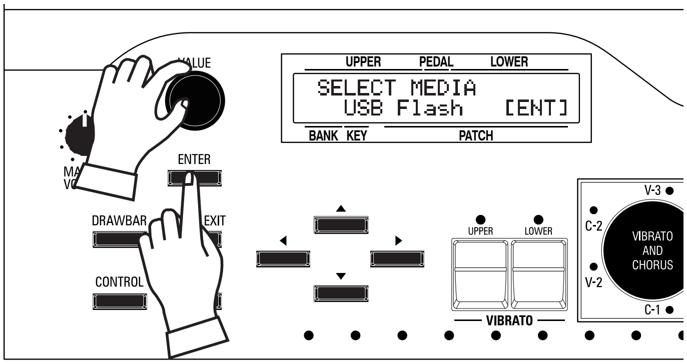
SAVING A SETUP

①


USB
TO FLASH DRIVE
TO HOST
OUT
USB flash drive

If you wish to save your Setup to a USB Flash Drive, insert the Flash Drive into the USB "B" port on the instrument.

②


VALUE
UPPER PEDAL LOWER
SELECT MEDIA
USB Flash [ENT]
BANK KEY PATCH
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

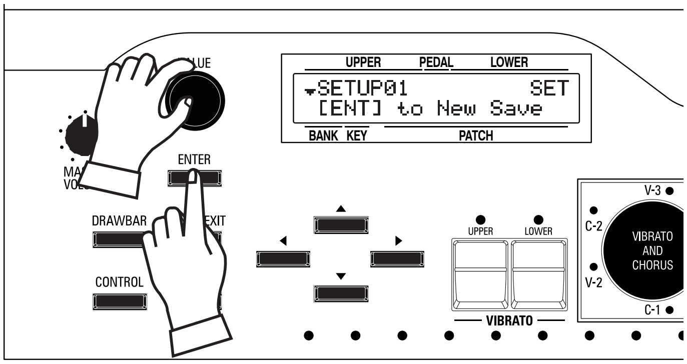
Follow the steps in the diagram at the top of the page to access the SAVE Edit Menu. You will first be asked where you want to save a Setup file.

Select the USB Flash or the INTERNAL MEM with the [VALUE] Rotary Knob and make your selection with the [ENTER] Touch Button.

NOTE: This message only displays when a USB Flash Drive is inserted. If there is no USB Flash Drive, the Setup will be saved to the Internal Memory.

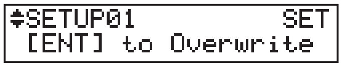
③

SAVE AS NEW FILE


VALUE
UPPER PEDAL LOWER
SETUP01 SET
[ENT] to New Save
BANK KEY PATCH
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

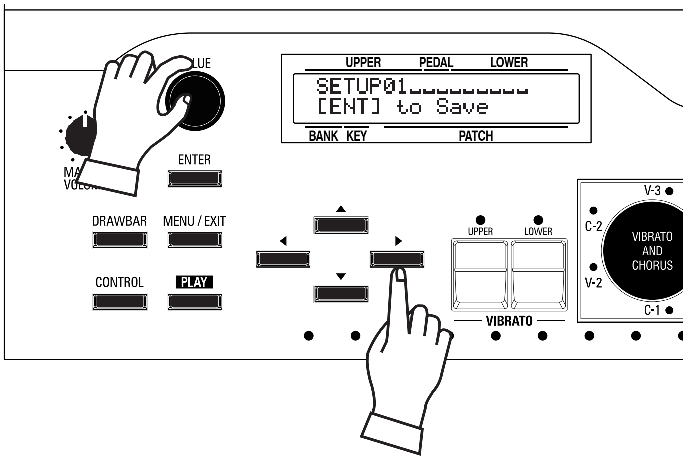
If you wish to save your Setup as a new file, press the [▲] Touch Button or turn the [VALUE] Rotary Knob until "New Save" appears on the lower line of the display. Press the [ENTER] Touch Button.

OVERWRITE RECENT FILE


SETUP01 SET
[ENT] to Overwrite

If you wish to overwrite a file, press the [▲] Touch Button or turn the [VALUE] Rotary Knob until "[ENT To Overwrite" appears on the lower line of the display. Press the [ENTER] Touch Button.

④


LUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MA
VOLU
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

SETUP01␣␣␣␣␣␣␣␣␣
[ENT] to Save

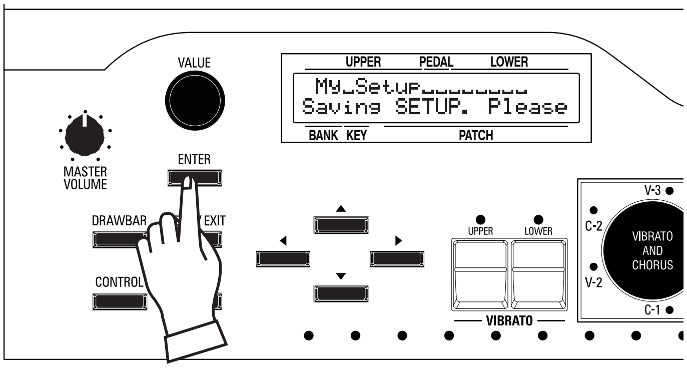
You can enter a name using up to 10 characters.

[◀][▶] Touch Buttons:	Moves the cursor.
[VALUE] Rotary Knob:	Selects letters.

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

NOTE: Each time you save a new Setup, it will automatically be assigned a name followed by a number (“SETUPXX”). If you wish you may skip this step.

⑤


VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

My␣Setup␣␣␣␣␣␣␣␣
Saving SETUP. Please

Press the [ENTER] Touch Button to save the Setup. The display will show the above message for approximately 1 second.

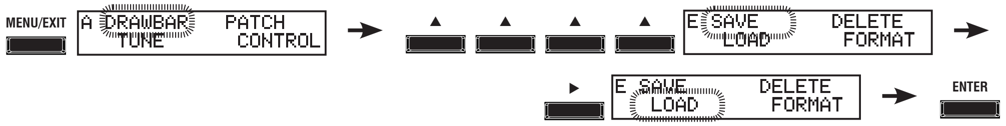
⑥

When the Setup file name displays, the Saving procedure is complete. Press the [PLAY] Touch Button to return to PLAY Mode.

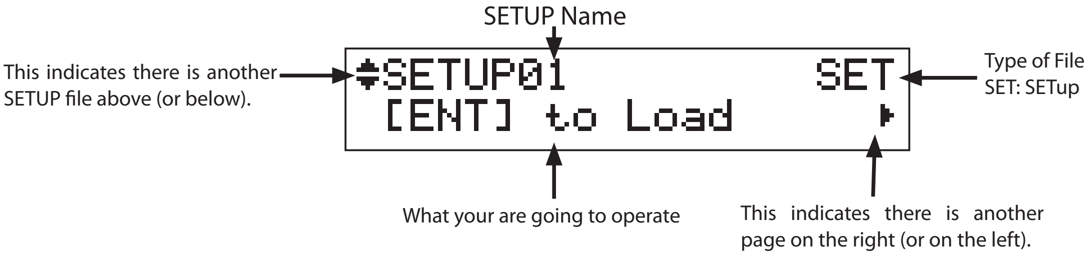
LOAD Edit Menu

This Edit Menu allows you to load a Setup file either from a USB Flash Drive or the Internal Memory.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
▲
▲
▲
▲
E SAVE DELETE
LOAD FORMAT
▶
E SAVE DELETE
LOAD FORMAT
ENTER

HOW TO READ THE DISPLAY


SETUP Name
This indicates there is another SETUP file above (or below).
⇕SETUP01 SET
[ENT] to Load ▸
Type of File
SET: SETup
What your are going to operate
This indicates there is another page on the right (or on the left).

LOAD THE SETUP

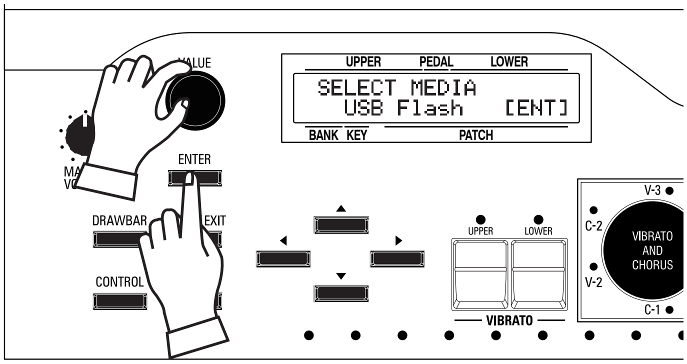
❖ *If you do this operation, the settings in the XK-5 are replaced with the newly loaded setups. You should save important data beforehand (P. 148).*

1

When you recall the Setups from the USB Memory, check that the USB Flash Drive is correctly inserted.

If there is no Flash Drive, the Setups are recalled from the Internal Memory.

2

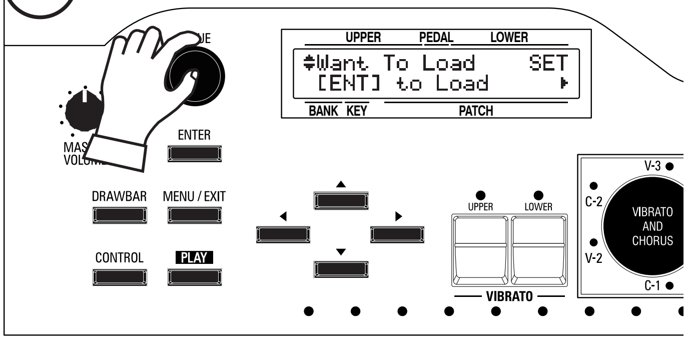

VALUE
UPPER PEDAL LOWER
SELECT MEDIA
USB Flash [ENT]
BANK KEY PATCH
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
VIBRATO

Follow the steps in the diagram at the top of the page to access the LOAD Edit Menu. You will first be asked from which media you want to load a Setup file.

Select the USB Flash or the INTERNAL MEM with the [VALUE] Rotary Knob and make your selection with the [ENTER] Touch Button.

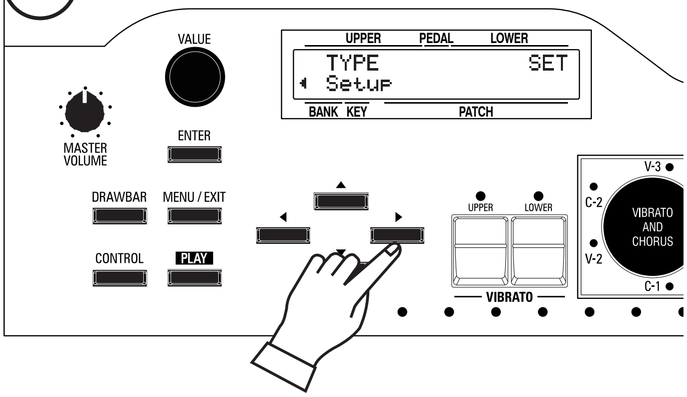
NOTE: This message only displays when a USB Flash Drive is inserted.

3


UPPER PEDAL LOWER
⇕Want To Load SET
[ENT] to Load ▸
BANK KEY PATCH
ENTER
DRAWBAR MENU / EXIT
CONTROL PLAY
UPPER LOWER
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
VIBRATO

Select the Setup file to recall using the [▲][▼] Touch Buttons or the [VALUE] Rotary Knob.

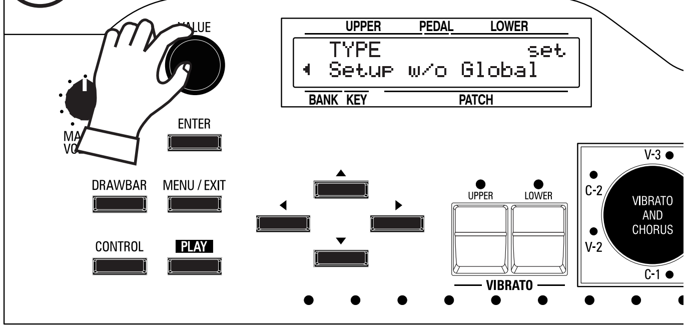
4


VALUE
UPPER PEDAL LOWER
TYPE SET
◂ Setup
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR MENU / EXIT
CONTROL PLAY
UPPER LOWER
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
VIBRATO

When you want to recall all the contents of a Setup File, go to Step 7.

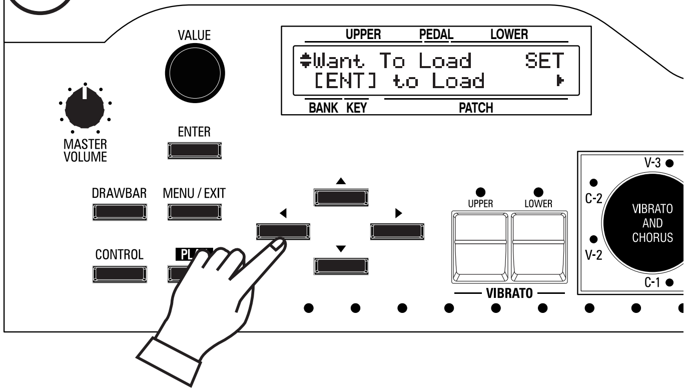
To recall a specific item in the Setup File, touch the [▶] Touch Button and locate the TYPE page.

5


VALUE
UPPER PEDAL LOWER
TYPE set
◂ Setup w/o Global
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

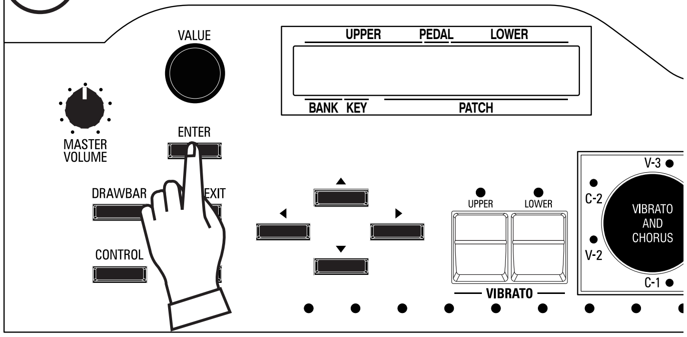
Select the parameter which you wish to load (see P. 146) using the [VALUE] Rotary Knob.

6


VALUE
UPPER PEDAL LOWER
⇕Want To Load SET
[ENT] to Load ▸
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

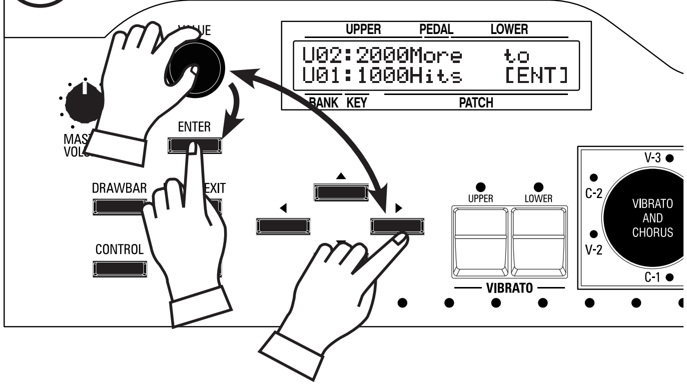
Press the [◀] Touch Button to return to the previous page.

7


VALUE
UPPER PEDAL LOWER
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

Press the [ENTER] Touch Button to decide.

8


UPPER PEDAL LOWER
U02:2000More to
U01:1000Hits [ENT]
BANK KEY PATCH
ENTER
DRAWBAR
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

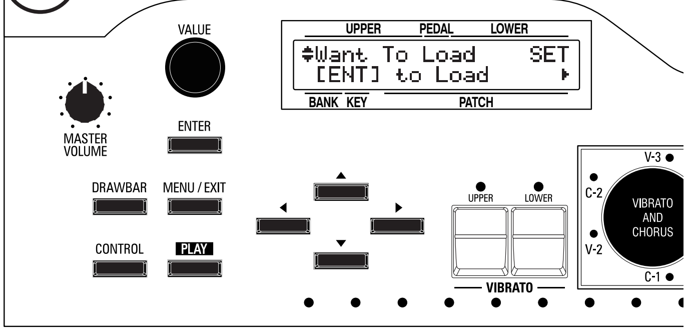
If you have selected a Patch in Step 5, the page will appear as above.

Use the [◀]/[▶] Touch Button and the [VALUE] Rotary Knob to select which Patch number in this Setup file you want to recall. and press the [ENTER] Touch Button.

9

The display will show, "Loading xxx. Please wait."

10


VALUE
UPPER PEDAL LOWER
⇕Want To Load SET
[ENT] to Load ▸
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

After the Load procedure is completed, the display will show the the selected Setup file name.

Press the [PLAY] Touch Button to return to PLAY Mode.

tips HOW TO USE "w/o Global"

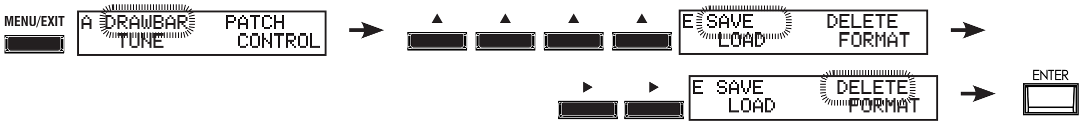
The "Setup w/o Global" option allows you to load all the contents in the Setup file except Global and System Parameters.

This is useful if you are exchanging Setup files with other players who may have different configurations, such as foot controllers or extended manuals.

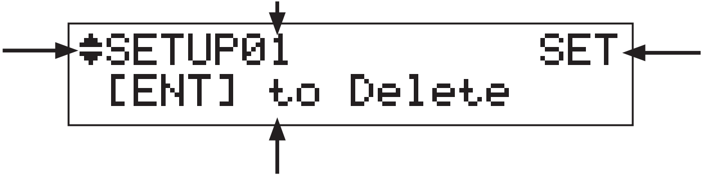
DELETE Edit Menu

This Edit Menu allows you to delete a Setup file either from a USB Flash Drive or the Internal Memory.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
E SAVE DELETE
LOAD FORMAT
E SAVE DELETE
LOAD FORMAT
ENTER

HOW TO READ THE DISPLAY


⇕SETUP01 SET
[ENT] to Delete

SETUP Name

This indicates there is another SETUP file above (or below).

Type of File
SET: SETup

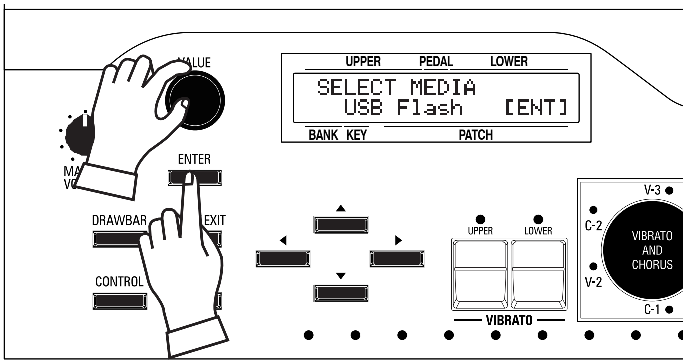
What your are going to operate

DELETING A SETUP

①

If you wish to delete a Setup from a USB Flash Drive, be sure that the USB Flash Drive is correctly inserted into the instrument. If there is no USB Flash Drive, the Setup file in the Internal Memory will be deleted.

②

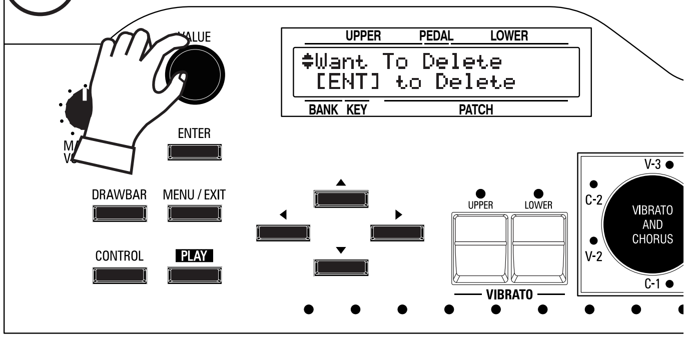

VALUE
UPPER PEDAL LOWER
SELECT MEDIA
USB Flash [ENT]
BANK KEY PATCH
ENTER
DRAWBAR
EXIT
CONTROL
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
UPPER LOWER
VIBRATO

Follow the steps in the diagram at the top of the page to access the DELETE Edit Menu. You will first be asked from which media you want to delete a Setup file.

Select the USB Flash or the INTERNAL MEM with the [VALUE] Rotary Knob and make your selection with the [ENTER] Touch Button.

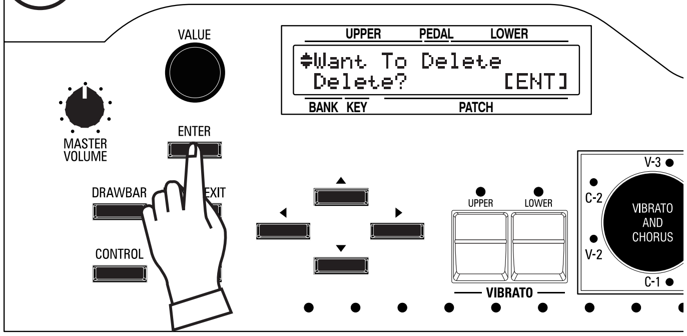
NOTE: This message only displays when a USB Flash Drive is inserted.

③


VALUE
UPPER PEDAL LOWER
⇕Want To Delete
[ENT] to Delete
BANK KEY PATCH
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
VIBRATO

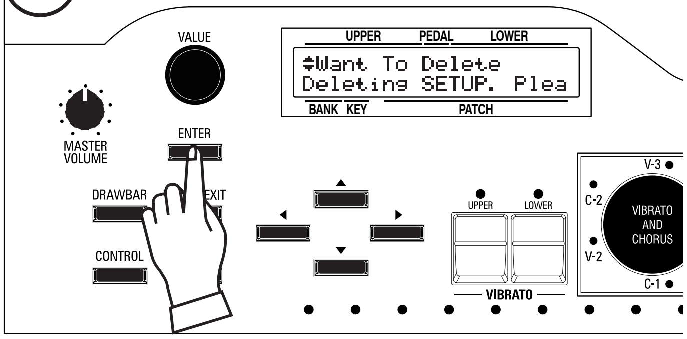
Select the Setup file you wish to delete either by using the [▲][▼] Touch Buttons or [VALUE] Rotary Knob.

④


VALUE
UPPER PEDAL LOWER
⇕Want To Delete
Delete? [ENT]
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
V-3
C-2
VIBRATO AND CHORUS
V-2
C-1
VIBRATO

Press the [ENTER] Touch Button. You will be asked to confirm that you want to delete the selected Setup file.

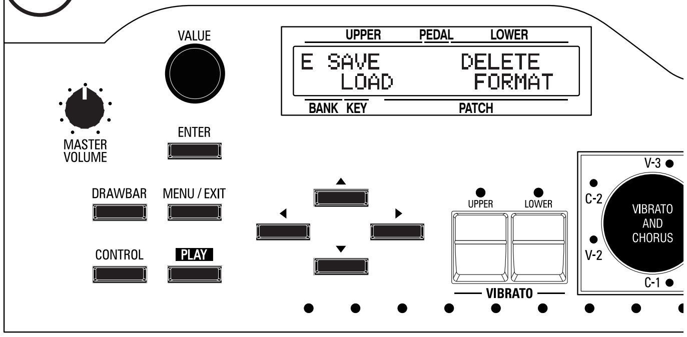
5


VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
EXIT
CONTROL
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

⇕Want To Delete
Deleting SETUP. Plea

Press the [ENTER] Touch Button again to delete the selected file.

6


VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

E SAVE DELETE
LOAD FORMAT

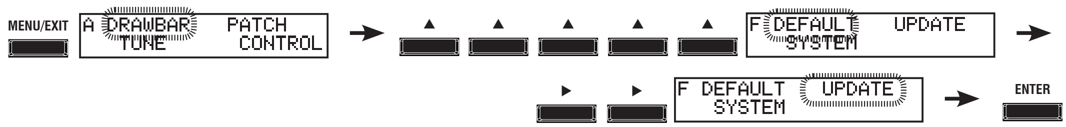
When the above screen displays, the Delete procedure is finished. Press the [PLAY] Touch Button to return to PLAY Mode.

UPDATE Edit Menu

This mode allows you to update the system software of the XK-5 either from a USB flash drive or the internal memory.

To update the system, download the updator and load into the XK-5.

To locate this Menu, follow the steps below:


MENU/EXIT
A DRAWBAR PATCH
TUNE CONTROL
F DEFAULT UPDATE
SYSTEM
F DEFAULT UPDATE
SYSTEM
ENTER

IMPORTANT: The update process may take as long as 15 minutes depending on the extent of the update. Therefore, if you are updating the System Software, be sure you set aside enough time in an environment with a continuous AC power supply.

1

The update files will be found on the Hammond website. Download the update file(s) to your computer. It is recommended that you download the update file to your Desktop.

2

The update file will most likely be in a compressed format (.ZIP). Therefore, unzip the file. The unzip procedure will automatically create and name a folder to which to copy the unzipped files.

3

Insert a USB Flash Drive that has been previous formatted in the XK-5 into an open USB port on your computer. Wait for the computer to find the drive and assign it a drive letter.

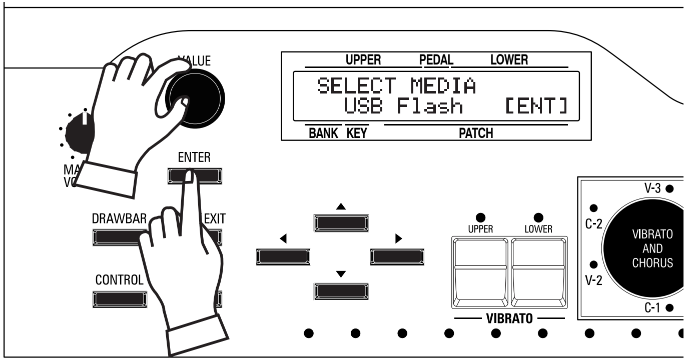
4

Open the folder containing the unzipped files. These should have a .SYS extension. Copy these files into the "SYS" folder on your USB Flash Drive.

5

After doing the above, remove the USB Flash Drive from your computer and insert it into the USB port of your XK-5. The display will show: `Confirming USB Please wait...` for about 3 seconds.

6


VALUE
UPPER PEDAL LOWER
SELECT MEDIA
USB Flash [ENT]
BANK KEY PATCH
ENTER
DRAWBAR
EXIT
CONTROL
UPPER LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

Follow the steps in the diagram at the top of the page to access the UPDATE Edit Menu. You will first be asked from which media you want to read the Update files.

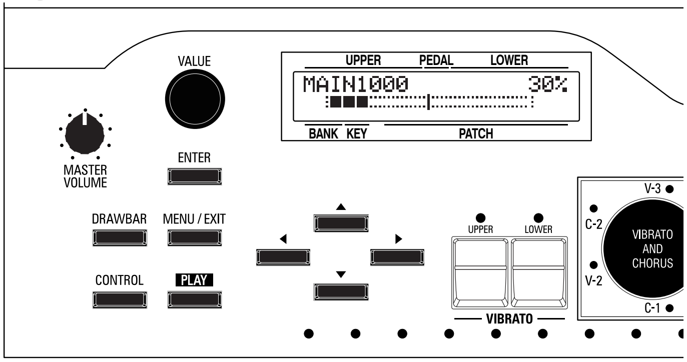
Select the USB Flash or the INTERNAL MEM with the [VALUE] Rotary Knob and make your selection with the [ENTER] Touch Button.

NOTE: This message only displays when a USB Flash Drive is inserted.

NOTE: If there are no System (.SYS) files on the USB Flash Drive, the display will show:

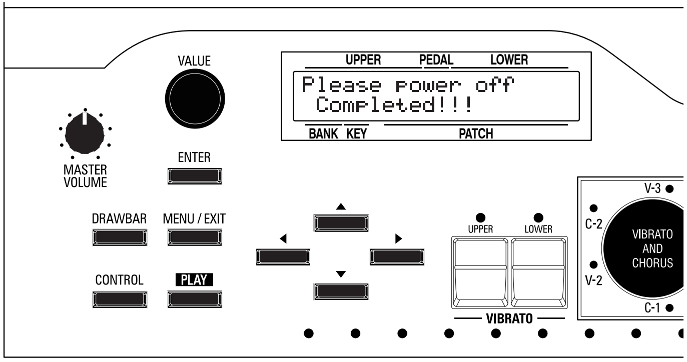
`No system files.`

7


VALUE
UPPER PEDAL LOWER
MAIN1000 30%
BANK KEY PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

After you touch the [ENTER] Touch Button, the update procedure will start. The display will show a Status Bar and a percentage number showing the progress of the Update.

8


VALUE
UPPER
PEDAL
LOWER
BANK
KEY
PATCH
MASTER VOLUME
ENTER
DRAWBAR
MENU / EXIT
CONTROL
PLAY
UPPER
LOWER
VIBRATO
V-3
C-2
V-2
C-1
VIBRATO AND CHORUS

```
Please power off
 Completed!!!
```

When the above message displays, the Update procedure is Completed.

When the Update procedure is complete:

1. Remove the USB Flash Drive from the USB Port.

2. Turn the power to the instrument “OFF,” then “ON.” The XK-5 is now updated and ready to play.

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FREQUENTLY ASKED QUESTIONS

TROUBLESHOOTING

- **Entire instrument fails to play.**
  - The MASTER VOLUME Rotary Knob is at the minimum setting. Adjust the volume using the MASTER VOLUME Rotary Knob.
  - MIDI LOCAL CONTROL is set to "OFF." Turn MIDI LOCAL CONTROL "ON" if you are not not using an external sequencer or computer. See page 135 for instructions on how to do this.
- **Malfunction of buttons, keys, etc.**
  - Turn the power to the instrument "OFF," then turn it "ON" again. If this procedure is not successful,
    1. Turn the power to the instrument "OFF."
    2. Press and Hold the [RECORD] Touch Button.
    3. While holding the [RECORD] Touch Button, turn the power to the instrument "ON."

    NOTE: All parameters will return to their factory settings.
- **[MENU/EXIT] and [RECORD] Touch Buttons do not work.**
  - The display is locked. Turn DISPLAY LOCK "OFF." See page 44 for instructions on how to do this.
- **Drawbars do not change tone.**
  - The Assignable Drawbar parameter may be enabled. See page 125 for instructions on how to check this.
- **SPLIT does not work.**
  - MIDI IN mode is set at "LOWER" or "UPPER."

    Set the MIDI IN mode according to your preference (See p. 135 for instructions on how to do this).

    If you have the Model A-3 or you are using the XK-5 in conjunction with the XLK-5 or XLK-3 Lower Manual, the SPLIT feature is disabled. The Lower Manual Drawbars tones will play from the connected Lower Manual.
- **PEDAL TO LOWER does not function.**
  - The PEDAL TO LOWER function is assigned to the Foot Switch. Use the Foot Switch to turn PEDAL TO LOWER "ON" and "OFF," or assign another function to the Foot Switch. See page 122 for instructions on how to do this.
  - If the XK-5 is used as a single-manual instrument, the SPLIT feature must be "ON" in order for the PEDAL TO LOWER function to work. (P. 66).
- **Expression does not work.**
  - If an Expression Pedal is connected to either of the Foot Controller jacks, the EXPRESSION SOURCE parameter for that jack must be set to "EXPRESSION." (P. 123).
  - OVERDRIVE EXPRESSION is set at "OD Only" or "Input." Set the value of the OVERDRIVE EXPRESSION at "EX-OD" or "OD-EX." (P. 83).
  - The "Wah-Wah" Multi-Effect can be controlled by an Expression Pedal. If the Wah-Wah SOURCE (SRC) parameter is set at "EXP," the Expression Pedal will not change the volume. Set the SRC parameter at "MAN" or "LFO." (P. 85).
- **Foot Switch does not work.**
  - Check the settings for "Control - Foot Switch" (P. 122).
- **The sound is interrupted when a Patch is changed.**
  - The sound will be interrupted momentarily if changing Patches changes the settings for the the following parameters:

    Multi-Effects

    OCTAVE

    SPLIT

    PEDAL TO LOWER

    INTERNAL or EXTERNAL ZONES.

APPENDIX

MIDI TEMPLATE

Template		Basic	2or3 KBD	SeqMContact
Messages	MIDI IN	Sequence	Lower	Sequence
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
	External Zone	Off	Off	Off
Transmit Channel	Tx. Upper	1	1	1(disregarded)
	Tx. Lower	2	2	4(disregarded)
	Tx. Pedal	3	3	7(disregarded)
	Tx. Multi	Off	Off	On
	Rx. Upper	1	1(disregarded)	1(disregarded)
	Rx. Lower	2	2 (disregarded)	4(disregarded)
	Rx. Pedal	3	3 (disregarded)	7(disregarded)
	Rx. Multi	Off	Off	On
Comments		This template is used for recording / playing back a performance to / from an external sequencer either stand-alone or with a Pedal Clavier.	This template is used for playing the XK-5 with a Lower Manual connected to the MIDI IN OTHER jack, and a Pedal Clavier connected to the MIDI IN PEDAL jack.	This template is used for recording / playing back a performance to / from an external sequencer with XLK-5 / XPK-250 and multi-contact signal. The MIDI channels are set from 1 to 9.

Template		Use Ex. Zone	Use Ex. 2or3KB	
Messages	MIDI IN	Sequence	Lower	
	Local Control	On	On	
	NRPN	On	On	
	Program Change	On	On	
	Drawbar Registration	On	On	
	External Zone	On	On	
Transmit Channel	Tx. Upper	Off	Off	
	Tx. Lower	Off	Off	
	Tx. Pedal	Off	Off	
	Tx. Multi	Off	Off	
	Rx. Upper	1	1 (disregarded)	
	Rx. Lower	2	2 (disregarded)	
	Rx. Pedal	3	3 (disregarded)	
	Rx. Multi	Off	Off	
Comments		This template is used for controlling MIDI equipment via External Zones when playing either stand-alone or with a Pedal Clavier.	This template is used for controlling MIDI equipment via External Zones when playing using a Lower Manual and a Pedal Clavier connected to the MIDI IN jack.	

FACTORY PATCHES

Category	#	Name
Jazz	F00	Jimmy 1
	F01	Jimmy 2
	F02	Jimmy 3
	F03	Burner
	F04	Groove
	F05	Smooth Bass
	F06	Shirley
	F07	Jimmy MC
	F08	Fat Bass
	F09	All Nine
Gospel	F10	Gospel 1
	F11	Gospel 2
	F12	Gospel 3
	F13	Gospel 4
	F14	Praise 1
	F15	Praise 2
	F16	Praise 3
	F17	Praise 4
	F18	Meditaion
	F19	Full Gospel
Rock	F20	Purple
	F21	Emerson
	F22	Some Lovin
	F23	Booker
	F24	Rock 1
	F25	Rock 2
	F26	Rock 3
	F27	Full 1
	F28	Full 2
	F29	Full Overd
Theatre	F30	Theatre C#
	F31	Theatre D
	F32	Theatre D#
	F33	Theatre E
	F34	Theatre F
	F35	Theater F#
	F36	Theatre G
	F37	Theatre G#
	F38	Theatre A
	F39	Full Theatre
Tibia	F40	Tibia 8 & 4
	F41	Tibia 8 & 2
	F42	Tibia & Vox
	F43	Tibia 8, 4 & 2
	F44	Tibia 16 & 8
	F45	Tibia 16 & 4
	F46	Tibia 16, 8 & 4
	F47	Tibia 16, 8 , 4 & 2
	F48	Tibia 16, 8, 4, 2 & 1
	F49	Full Tibia

Category	#	Name
Church	F50	Gedeckt 8
	F51	Flute 8 & 4
	F52	Principal 8
	F53	Principal Chorus
	F54	Rohr Flute
	F55	Gamba Celeste
	F56	Comet
	F57	Sesquialtera
	F58	Chorus & Mixture
	F59	Sforzando
Lo & Hi	F60	Lo & Hi 1
	F61	Lo & Hi 2
	F62	Lo & Hi 3
	F63	Odd Harmonic
	F64	M3 Low Man
	F65	Perc 16 & 4
	F66	Solo 16 & 2
	F67	Cute Solo
	F68	Eddies wind
	F69	Full Hamm
Intro 1	F70	White Shade
	F71	Percuss Bass
	F72	Four Beat
	F73	Walter Summer
	F74	Short Wave
	F75	Right 2 Left
	F76	10th Avenue
	F77	Popcorn
	F78	Doubling
	F79	Banjo
Intro 2	F80	Soloist
	F81	Choke Nose
	F82	Wah Pedal
	F83	S. F. 4ever
	F84	Upward Perc.
	F85	Dim. Trill
	F86	[REV] Loop
	F87	Jimmy 1 A-100
	F88	Jimmy 1 B-3
	F89	Jimmy 1 C-3
B-3	F90	Cancel
	F91	Stopped Fl
	F92	Dulciana
	F93	Fr. Horn
	F94	Salicional
	F95	Flutes 8 & 4
	F96	Oboe Horn
	F97	Diapason
	F98	Trumpet
	F99	Full Swell

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, 32)

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)
mm,ll=Bank Number: 00H 00H = User
01H 00H = Factory
64H 00H - 6DH 00H= Bank [C] to [A]

Until you send the Program Change, the Bank Select process is reserved.

Volume (CC#7)

Status	2nd Byte	3rd Byte
BnH	07H	vvH

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)
vv=Volume: 00H - 7FH (0 - 127)

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

Sustain (CC#69)

Status	2nd Byte	3rd Byte
BnH	45H	vvH

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)
vv=Control Value: 00H - 7FH (0 - 127)
0 - 63=Off, 64 - 127=On

Leslie Fast (CC#92)

Status	2nd Byte	3rd Byte
BnH	5CH	vvH

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)
vv=Control Value: 00H - 7FH (0 - 127)
0 - 63=Off, 64 - 127=On

This control change is only for receive.

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 = Patch #0 to 99
64H - 6DH = Key [C] to [A]
7EH, 7FH = Adjust [A#], [B]

Example of operation

ex: select Patch F15 for Upper part

Bx 00 01 Bx 20 00 Cx 0F (x=Upper Channel)

ex: select Favorite Bank[C#], Key[F] for Upper part

Bx 00 65 Bx 20 00 Cx 69 (x=Upper Channel)

ex: select Adjust [B] for Upper part

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)

When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.

Reset All Controllers (CC#121)

Status	2nd Byte	3rd Byte
BnH	79H	00H

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)

When this message is received, the following controllers will be set to their reset values.

Expression:	127
Glide:	Off
Damper:	Off
Sustain:	Off

NRPN: unset; previously set data will not change

All Notes Off (CC#123)

Status	2nd Byte	3rd Byte
BnH	7BH	00H

n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)

When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

DRAWBAR DATA LIST 1

CONTROL NUMBER

Upper:	50H(80)
Lower:	51H(81)
Pedal:	52H(82)

	Upper / Lower									Pedal	
Level	16´	5 ⅓´	8´	4´	2 ⅔´	2´	1 ⅗´	1 ⅓´	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

	Control Number								
Part	16´	5 ⅓´	8´	4´	2 ⅔´	2´	1 ⅗´	1 ⅓´	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)	-	-	-	-	-	-

	Level								
	0	1	2	3	4	5	6	7	8
Value	00 - 0FH (0 - 15)	10 - 1FH (16 - 31)	20 - 2FH (32 - 47)	30 - 3FH (48 - 63)	40 - 4FH (64 - 79)	50 - 5FH (80 - 95)	60 - 6FH (96 - 111)	70 - 7EH (112-126)	7FH (127)

ex: Set Lower 8´ to level 7 via MIDI... Bx 17 70 (x=Upper Channel)

SYSTEM EXCLUSIVE MESSAGE

MEMORY DUMP

1. Each Packet

F0	System Exclusive
55	SUZUKI ID
dd	Device ID (refer to P. <?> #19)
10	Model ID MSB
22	Model ID LSB
11	Command: Data Packet
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
[DATA]	64 Bytes Data 128 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
22	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: 4373
Temporary Dump: 21

DUMP REQUEST (RX. ONLY)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
22	Model ID LSB
12	Command: Dump Request
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump
F7	End Of Exclusive

MODE SET

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

When this device receives this message, resets all the controllers and all notes off.

NRPN SWITCH

F0	Suzuki Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
22	Model ID LSB
02	Command: NRPN Sw.
[DATA]	00H = Off, 7FH = On
F7	End Of Exclusive

When this device receives this message, switches Tx & Rx NRPN in Control channel.

DATA SET (RX. ONLY)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
22	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 22	Device Family number
00 00	
00 00	
F7	End Of Exclusive

When Identity Request is received, Identity Reply will be transmitted.

GLOBAL PARAMETERS

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 Hz)	0338	A= 440 Hz
Expression	Source	02	00	00	02	00	01	00 - 02 (Pedal, MIDI, Both)	00	Pedal
	Min. Level	02	08	00	02	08	01	00 - 29 (Off, -40dB - -0dB)	06	-35dB
	Min. Limit LF	02	09	00	02	09	01	00 - 29	15	-20dB
	Min. Limit HF	02	0A	00	02	0A	01	(Off, -40dB - -0dB)	0B	-30dB
Foot Switch	Foot Controller 1 Mode	03	00	00	03	00	01	00 - 27 00: Off 01: Expression 02: Leslie Fast (alternate) 03: Leslie Fast (momentarily) 04: Leslie Fast (tri-state) 05: Glide 06: Patch Fwd. 07: Patch Back 08: Favorite Fwd. 09: Favorite Back 0A: Spring Shock 0B: Delay Time 0C: Damper 0D: Sustain 0E: Manual Bass 0F - 27: Bass 1C - 3C 28: Prochord Closed 29: Prochord Open	01	Expression
	Foot Controller 2 Mode	03	01	00	03	01	01	Same as above	02	Leslie Fast (alternate)
	Foot Switch EXP-100 Mode	03	02	00	03	02	01	-1 than above	01	Leslie Fast (alternate)
	Damper Upper	03	03	00	03	03	01	00, 01 (Off/On)	01	On
	Damper Lower	03	04	00	03	04	01	00, 01 (Off/On)	01	On
	Damper Pedal	03	05	00	03	05	01	00, 01 (Off/On)	01	On
Panel Switch	Octave Down Mode	03	0C	00	03	0C	01	00 - 07 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	0D	00	03	0D	01	Same as above	00	Origin
	Octave Lower Mode	03	0E	00	03	0E	01	Same as above	00	Origin
Patch Load	Drawbar Regist.	6b	00	00	6b	00	01	00, 01 (Off/On)	01	On
	Internal Zone (INT)	6b	01	00	6b	01	01	00, 01 (Off/On)	01	On except b=9
	External Zone (EXT)	6b	02	00	6b	02	01	00, 01 (Off/On)	01	On except b=9
	Organ Effect (DRAWB)	6b	03	00	6b	02	01	00, 01 (Off/On)	01	On except b=9
	Animation (ANI)	6b	04	00	6b	04	01	00, 01 (Off/On)	01	On except b=9
	Drawbar Parameters (DRAWB)	6b	05	00	6b	05	01	00, 01 (Off/On)	01	On except b=9
	Reverb (REV)	6b	06	00	6b	06	01	00, 01 (Off/On)	01	On except b=9
	Link Pedal to Lower	6b	07	00	6b	07	01	00, 01 (Off/On)	01	On except b=9
	Percussion (PERC)	6b	08	00	6b	08	01	00, 01 (Off/On)	01	On except b=9
	"b" means Preset Bank.									
Favorites	Use Favorites	04	00	00	04	00	01	00, 01 (Off/On)	00	Off
	Preset Key Hold Time	04	01	00	04	01	01	00 - 10 (0.0 - 1.0 sec)	00	0 sec
Display	Short Cut	--	--	--	--	--	--	0, 1, 2 sec, No	01	1 sec
	Time Out	--	--	--	--	--	--	4, 8, 16 sec, No	04	No
	Pop Up	--	--	--	--	--	--	No, 0.5, 1, 2 sec	02	1 sec
Master EQ	Bass Freq.	03	06	00	03	06	01	00 - 18 (20 - 308 Hz)	07	104Hz
	Treble Freq.	03	07	00	03	07	01	00 - 13 (3.0 - 8.0 kHz)	04	4.0kHz
	Bass Gain	03	08	00	03	08	01	00 - 09 - 12 (-9 - ±0 - +9 dB)	09	0
	Mid Gain	03	09	00	03	09	01	00 - 09 - 12 (-9 - ±0 - +9 dB)	09	0
	Treble Gain	03	0A	00	03	0A	01	00 - 09 - 12 (-9 - ±0 - +9 dB)	09	0
	Mid Freq.	03	0B	00	03	0B	01	00 - 0F (250 Hz - 3.1 kHz)	07	1.5 kHz

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 22 13 00 01 00 40 F7 (dd = Device ID)

PATCH PARAMETERS

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Upper Name	10 Characters	--	--	01	00	00	0A	7 bit ASCII	always
Lower Name	10 Characters	--	--	01	00	01	0A	7 bit ASCII	always
Internal Zone	Split	05	00	00	05	00	01	00, 01 (Off/On)	INT
	Split Point	05	01	00	05	01	01	24 - 60 (MIDI note number)	
	Key Octave Upper	05	02	00	05	02	01	3E - 40 - 42 (-2 - ±0 - +2)	
	Glide Length	05	03	00	05	03	01	28 - 40 - 4C (-24 - ±0 - +12 semitones)	
	Glide Time	05	04	00	05	04	01	00 - 31 (0.1 - 5.0 seconds)	
	Glide Amp	05	05	00	05	05	01	00, 01 (Off/On)	
	Pedal To Lower	0B	00	00	06	00	01	00, 01 (Off/On)	
	PtoL Mode	0B	01	00	06	01	01	00 - 02 (Lower, Chord, Poly)	
	PtoL Range Hi	0B	02	00	06	02	01	24 - 60 (MIDI note number)	
	Key Octave Lower Split	0B	03	00	06	03	01	3E - 40 - 42 (-2 - ±0 - +2)	
	Key Octave Lower Real	0B	04	00	06	04	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)	
	Key Range Lo	4n	02	00	4n	02	01	24 - 60 (MIDI note number)	
	Key Range Hi	4n	03	00	4n	03	01	24 - 60, 61 (MIDI note number, Off)	
	Bank Select MSB	4n	04	00	4n	04	01	00 - 7F	
	Bank Select LSB	4n	05	00	4n	05	01	00 - 7F	
	Program Change	4n	06	00	4n	06	01	00 - 7F (1 - 128)	
	Octave Shift	4n	07	00	4n	07	01	3E - 40 - 42 (-2 - ±0 - +2)	
	Volume	4n	08	00	4n	08	01	00 - 7F (0 - 127)	
	Pan	4n	09	00	4n	09	01	00 - 40 - 80 (L64 - C - R63)	
	Velocity	4n	0A	00	4n	0A	01	00 - 04 (Off, Normal - Easy)	
	Expression Minimum	4n	0B	00	4n	0B	01	00 - 3F (0 - 63)	
	Expression Maximum	4n	0C	00	4n	0C	01	40 - 7F (64 - 127)	
	Expression CC#	4n	0D	00	4n	0D	01	00 - 02 (Off, 7, 11)	
	Tx. Damper On	4n	0E	00	4n	0E	01	00 - 03 (Off, CTRL1, CTRL2, EXP)	

Example "n" means Zone number. 1=0, 2=1, 3=2

Turn Split On via NRPN......................................Bx 62 07 63 05 06 01 (x = Upper channel)

Turn Split On via System Exclusive.......................F0 55 dd 10 22 13 00 07 05 01 F7 (dd = Device ID)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Percussion	Percussion On	08	00	00	08	00	01	00, 01 (Off/On)	PERC
	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 - 3F (-22 - +10.5 dB)	
	Level On Normal	08	05	00	08	05	01	00 - 3F (-22 - +10.5 dB)	
	Decay Rate Fast	08	06	00	08	06	01	00 - 17, 18 (1 - 24, Cont)	
	Decay Rate Slow	08	07	00	08	07	01	00 - 17, 18 (1 - 24, Cont)	
	Touch	08	08	00	08	08	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	04	00	20	04	01	00 - 05 00: A-100 01: B-3 02: C-3 03: Mellow 04: Vx 05: Farf 06: Pipe	DRAWB
	Envelope	20	05	00	20	05	01	00, 01 - 10, 11 - 20 00: Contact 01 - 10: R1 - R15 11 - 20: AR1 - AR15	
	Contact Time Offset	20	06	00	20	06	01	00 - 40 - 7F (-64 - 0 - +63)	
	Contact Damping	20	07	00	20	07	01	00 - 1F (0 - 31)	
	Fold Back Lo	20	08	00	20	08	01	00 - 0C (C1 - C2)	
	Fold Back Hi	20	09	00	20	09	01	2B - 30 (G4 - C5)	
	Leakage Level	20	0A	00	20	0A	01	00 - 7F (0 - 127)	
	Custom Pipe	20	0B	00	20	0B	01	00 - 04 (U1 - 3, F1 - 3)	
	Custom Contact	20	0C	00	20	0C	01	00 - 04 (U1 - 3, F1 - 3)	
	Custom TW A-100	20	0D	00	20	0D	01	00 - 04 (U1 - 3, F1 - 3)	
	Custom TW B-3	20	0E	00	20	0E	01	00 - 04 (U1 - 3, F1 - 3)	
	Custom TW C-3	20	0F	00	20	0F	01	00 - 04 (U1 - 3, F1 - 3)	
	Custom TW Mellow	20	10	00	20	10	01	00 - 04 (U1 - 3, F1 - 3)	
	Octave Shift Upper	20	00	00	20	00	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Upper	20	01	00	20	01	01	24 - 60 (MIDI note number)	
	Key Range Hi Upper	20	02	00	20	02	01	24 - 60 (MIDI note number)	
	Sustain Length Upper	20	03	00	20	03	01	00 - 04 (1 - 5)	
	Octave Shift Lower	21	00	00	21	00	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Lower	21	01	00	21	01	01	24 - 60 (MIDI note number)	
	Key Range Hi Lower	21	02	00	21	02	01	24 - 60 (MIDI note number)	
	Sustain Length Lower	21	03	00	21	03	01	00 - 04 (1 - 5)	
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)	

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Pedal	Organ Type	22	03	00	22	03	01	00 - 03 00: Normal 01: Muted 02: Synth 1 03: Synth 2	DRAWB
	Envelope	22	04	00	22	04	01	00, 01 - 10, 11 - 20 00: Contact 01 - 10: R1 - R15 11 - 20: AR1 - AR15	
	Sustain On	22	06	00	22	06	01	00, 01 (Off/On)	
	Sustain Length	22	07	00	22	07	01	00 - 04 (1 - 5)	
	Decay Length	22	08	00	22	08	01	00 - 05 (1 - 5, Cont)	
	Velocity	22	09	00	22	09	01	00 - 04 (Off, Normal - Easy)	
	Key Mode	22	0A	00	22	0A	01	00, 01 (Mono/Poly)	
	Octave Shift	22	00	00	22	00	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	22	01	00	22	01	01	24 - 60 (MIDI note number)	
	Key Range Hi	22	02	00	22	02	01	24 - 60 (MIDI note number)	
	Custom Sub DB	22	0B	00	22	0B	01	00 - 04 (U1 - 3, F1 - 3)	
Pedal Registration	16´	--	--	01	03	00	01	00 - 08 (0 - 8)	L/P
	8´	--	--	01	03	01	01	00 - 08 (0 - 8)	
Organ Effects	Leslie Bypass	09	00	00	09	00	01	00, 01 (Enable / Bypass)	ANI
	Leslie Fast	09	01	00	09	01	01	00, 01 (Slow or Stop / Fast)	
	Leslie Stop	09	06	00	09	06	01	00, 01 (Slow / Stop)	
	Leslie Cabinet Number	09	02	00	09	02	01	00 - 0F (U1 - U8, F1 - F8)	
	Vibrato On Upper	09	03	00	09	03	01	00, 01 (Off/On)	
	Vibrato On Lower	21	04	00	21	04	01	00, 01 (Off/On)	
	Vibrato On Pedal	09	04	00	09	04	01	00, 01 (Off/On)	
	Vibrato Mode	09	05	00	09	05	01	00 - 05 (V1 - C3)	
	Vibrato Type	09	07	00	09	07	01	00 - 02 (55-57, 57-59, 59+)	
	Vibrato Rate	09	08	00	09	08	01	00 - 7F (5.78 - 7.90 Hz)	
	Vibrato Mix	09	09	00	09	09	01	00 - 40 - 7F (D64 - Even - 63V)	
Reverb	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 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)	
	Leslie On Reverb	0A	06	00	0A	06	01	00, 01 (Off/On)	

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Effects	Overdrive On	30	00	00	30	00	01	00, 01 (Off/On)	EFFECT
	Overdrive Type	30	01	00	30	01	01	00 - 03 00: Tube 01: Stomp Box 02: Clip 03: E. Pf. Amp	
	Overdrive Drive Level	30	02	00	30	02	01	00 - 7F	
	Overdrive Controlled Exp.	30	03	00	30	03	01	00-03 00: EX-OD 01: OD-EX 02: OD Only 03: Input	
	Multi Effect On	30	04	00	30	04	01	00, 01 (Off/On)	
	Multi Effect Type	30	05	00	30	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	30	06	00	30	06	01	00-03	
	Multi Effect Parameter 1	30	07	00	30	07	01	00-03	
	Multi Effect Parameter 2	30	08	00	30	08	01	00-7F	
	Multi Effect Parameter 3	30	09	00	30	09	01	00-7F	
	Multi Effect Parameter 4	30	0A	00	30	0A	01	00-7F	
	Multi Effect Parameter 5	30	0B	00	30	0B	01	00-7F	
	Multi Effect Parameter 6	30	0C	00	30	0C	01	00-7F	
	Multi Effect Parameter 7	30	0D	00	30	0D	01	00-7F	
	EQ Bass Gain	30	0E	00	30	0E	01	00 - 09 - 12 (-9 - ±0 - +9)	
	EQ Mid Gain	30	0F	00	30	0F	01	00 - 09 - 12 (-9 - ±0 - +9)	
	EQ Treble Gain	30	10	00	30	10	01	00 - 09 - 12 (-9 - ±0 - +9)	
	EQ Bass Frequency	30	11	00	30	11	01	00 - 18 (20 - 308 Hz)	
	EQ Mid Frequency	30	12	00	30	12	01	00 - 0A (250 Hz - 3.1 kHz)	
	EQ Treble Frequency	30	13	00	30	13	01	00 - 13 (3.0 - 8.0 kHz)	
	EQ Tone Control	30	14	00	30	14	01	00 - 09 - 0C (-9 - ±0 - +3)	
	Patch Level	30	15	00	30	15	01	00 - 7F (0 - 127)	
	Tube Routing	30	16	00	30	16	01	00 - 04 00: X7 to U7 01: U7 to X7 02: U7 to U7 03: X7 to X7 04: Bypass	
	Tube Drive Level	30	17	00	30	17	01	00 - 7F (0 - 127)	
	Trans Drive Level	30	18	00	30	18	01	00 - 7F (0 - 127)	
	Trans Hysteresis	30	19	00	30	19	01	00 - 7F (0 - 127)	
	Trans Depth Upper	30	1A	00	30	1A	01	00 - 7F (0 - 127)	
	Trans Depth Percussion	30	1B	00	30	1B	01	00 - 7F (0 - 127)	
	Trans Depth Lower	30	1C	00	30	1C	01	00 - 7F (0 - 127)	
	Trans Depth Pedal	30	1D	00	30	1D	01	00 - 7F (0 - 127)	

Example: Set Multi-Effect at Phaser via NRPN ....Bx 63 05 62 30 06 04 26 00 (x = Upper channel)
Set Multi-Effect at Phaser via SysEx ....F0 55 dd 10 22 13 00 30 05 04 F7 (dd = Device ID)

FAVORITES

Category	Parameter	SysEx Address MSB to LSB			SysEx Length	Data	Default	Description
Favorites	Upper	73	0b	0k	02	00 00 - 00 63, 01 00 - 01 63 (U00 - U99, F00 - F99)	same as Key	b: Bank [C] - [A]: 0 - 9 k: Key [C] - [A]: 0 - 9
	Lower	74	0b	0k	02			

Example Set Lower E-C# at U05 via System Exclusive........F0 55 dd 10 22 13 74 04 01 00 05 F7 (dd = Device ID)

LESLIE PARAMETERS

Category	Parameter	NRPN (XK-5)		NRPN (L21)		SysEx Address			SysEx Length	Data (XK-5)	Data (L21)
		LSB (62)	MSB (63)	LSB (62)	MSB (63)	MSB to LSB					
Cabinet	Name	--	--	--	--	03	00	00	0A	(10 Characters)	--
	Speaker	06	00	--	--	00	06	00	01	00 - 07 00: 145 Front 01: 145 Rear 02: 147 Front 03: 147 Rear 04: 122 Front 05: 122 Rear 06: Cone Type 07: PR-40	--
	Slow Speed Horn	06	01	7F	00	00	06	01	02	00 00, 00 01 - 00 65 (0, 20 - 120 rpm)	00, 01 - 31 (0, 24 - 168 rpm)
	Slow Speed Drum	06	02	7F	01	00	06	02	02	00 00, 00 01 - 00 65 (0, 20 - 120 rpm)	00, 01 - 09 (0, 24 - 48 rpm)
	Fast Speed Horn	06	03	7F	02	00	06	03	02	00 00, 00 01 - 02 2D (0, 200 - 500 rpm)	00, 01 - 1B (0, 376 - 452 rpm)
	Fast Speed Drum	06	04	7F	03	00	06	04	02	00 00, 00 01 - 02 2D (0, 200 - 500 rpm)	00, 01 - 15 (0, 372 - 431 rpm)
	Rise Time Horn	06	05	7F	04	00	06	05	01	00 - 24 (0.8 - 12.5 sec)	08 - 27 (0.8 - 12.5 sec)
	Rise Time Drum	06	06	7F	05	00	06	06	01	00 - 23 (1.0 - 12.5 sec)	01 - 22 (1.0 - 12.0 sec)
	Fall Time Horn	06	07	7F	06	00	06	07	01	00 - 24 (0.8 - 12.5 sec)	08 - 27 (0.8 - 12.5 sec)
	Fall Time Drum	06	08	7F	07	00	06	08	01	00 - 23 (1.0 - 12.5 sec)	01 - 22 (1.0 - 12.0 sec)
	Brake Time Horn	06	09	7F	08	00	06	09	01	00 - 24 (0.8 - 12.5 sec)	08 - 27 (0.8 - 12.5 sec)
	Brake Time Drum	06	0A	7F	09	00	06	0A	01	00 - 23 (1.0 - 12.5 sec)	01 - 22 (1.0 - 12.0 sec)
	Delay Time Horn	06	0B	--	--	00	06	0B	01	00 - 05 (0.0 - 1.0 sec)	--
	Delay Time Drum	06	0C	--	--	00	06	0C	01	00 - 05 (0.0 - 1.0 sec)	--
	Mic. Width Horn	06	0D	--	--	00	06	0D	01	00 - 64 (0 - 100 cm)	--
	Mic. Width Drum	06	0E	--	--	00	06	0E	01	00 - 64 (0 - 100 cm)	--
	Mic. Center Horn	06	0F	--	--	00	06	0F	01	0E - 40 - 72 (-50 - ±0 - +50 cm)	--
	Mic. Center Drum	06	10	--	--	00	06	10	01	0E - 40 - 72 (-50 - ±0 - +50 cm)	--
	Mic. Distance Horn	06	11	--	--	00	06	11	02	00 1E - 01 48 (30 - 200 cm)	--
	Mic. Distance Drum	06	12	--	--	00	06	12	02	00 1E - 01 48 (30 - 200 cm)	--
	Level Horn	06	13	7F	19	00	06	13	01	00, 01 - 4D (-Inf, -76 - 0 dB)	00 - 63 (0 - 99)
	Level Drum	06	14	7F	1A	00	06	14	01	00, 01 - 4D (-Inf, -76 - 0 dB)	00 - 63 (0 - 99)
	Level Sub Bass	06	15	7F	1B	00	06	15	01	00, 01 - 4D (-Inf, -76 - 0 dB)	00 - 63 (0 - 99)

NRPN XK-5 or L21 are switched automatically by whether the Leslie speaker is connected.
The "Time" parameter is a rough estimate at changing speed from 40 to 400 rpm.

TONE WHEEL PARAMETERS

Category	Parameter	SysEx Address MSB to LSB			SysEx Length	Data	Description
Temporary Tone Wheels	Name	1s	00	00	0A	(10 characters)	s: Tone Wheel set 0 = A-100 1 = B-3 2 = C-3 3 = Mellow
	Wheel Level	1s	01	tt	02	00 00 - 01 1B (0 - 155)	tt: Tone Wheel number; 00 - 0B (#01 - #12), 0C - 17 (#F01 - F12), 18 - 66 (#13 - #91), 67 - 6B (#F92 - #F96)
	Wheel HPF	1s	02	tt	01	00 - 7F (0 - 127)	
	Leak Trim	1s	03	tt	02	00 00 - 01 1B (0 - 155)	tt: Fundamental TW #; 00 - 54 (#01 - #73)
	Matrix Level	2s	nn	0g	02	00 00 - 01 1B (0 - 155)	nn: Note number g: Footage(0 = 16’, 1 = 5 1/3’... 8 = 1’)
	Leak Level	3s	tt	ll	02	00 00 - 01 1B (0 - 155)	tt: Fundamental TW #; 00 - 54 (#01 - #73) ll: Leaking TW #; 48 - 66 (#61 - #91)

PIPE PARAMETERS

Category	Parameter	SysEx Address MSB to LSB			SysEx Length	Data	Description
Pipes	Name	40	00	00	0A	(10 characters)	
	Volume	40	01	pp	01	00 - 7F (0 - 127)	pp: Pipe number 00 - 13 (#01 - #20)
	Detune	40	02	pp	01	0E - 40 - 72 (-50 - 0 - +50)	
	Chiff	40	03	pp	01	00 - 03 (Off, Soft, Normal, Loud)	
	Cutof Frequency	40	04	pp	01	00 - 40 (-64 - 0)	
	Pan Direction	40	05	pp	01	00 - 40 - 7F (L64 - Center - R63)	
	Pan Imaging	40	06	pp		00 - 04 (Fixed, L-R, R-L, Pyramid, Inverted Pyramid)	

PEDAL SUB DRAWBARS PARAMETERS

Category	Parameter	SysEx Address MSB to LSB			SysEx Length	Data	Description
Temporary Pedal Sub Drawbars	Name	50	00	00	0A	(10 characters)	
	Normal 16’ - 16’	50	00	01	01	00 - 08 (0 - 8)	
	Normal 16’ - 5 1/3’	50	00	02	01	00 - 08 (0 - 8)	
	Normal 16’ - 8’	50	00	03	01	00 - 08 (0 - 8)	
	Normal 16’ - 4’	50	00	04	01	00 - 08 (0 - 8)	
	Normal 16’ - 2 2/3’	50	00	05	01	00 - 08 (0 - 8)	
	Normal 16’ - 2’	50	00	06	01	00 - 08 (0 - 8)	
	Normal 16’ - 1 3/5’	50	00	07	01	00 - 08 (0 - 8)	
	Normal 16’ - 1 1/3’	50	00	08	01	00 - 08 (0 - 8)	
	Normal 8’ - 8’	50	00	09	01	00 - 08 (0 - 8)	
	Normal 8’ - 4’	50	00	0A	01	00 - 08 (0 - 8)	
	Normal 8’ - 2 2/3’	50	00	0B	01	00 - 08 (0 - 8)	
	Normal 8’ - 2’	50	00	0C	01	00 - 08 (0 - 8)	
	Normal 8’ - 1 3/5’	50	00	0D	01	00 - 08 (0 - 8)	
	Normal 8’ - 1 1/3’	50	00	0E	01	00 - 08 (0 - 8)	

CONTACT PARAMETERS

Category	Parameter	SysEx Address MSB to LSB			SysEx Length	Data	Description
Temporary Contacts	Name	60	00	00	0A	(10 characters)	
	Attack Rate Center	6p	1g	kk	01	00 - 7F (0 - 127)	p: Part (0 = Upper, 1 = Lower) g: Footage (0 = 16’, 1 = 5 1/3’... 8 = 1’, 9 = Perc) kk: MIDI note number
	Attack Rate Variation	6p	2g	kk	01	00 - 7F (0 - ±127)	
	Release Rate Center	6p	3g	kk	01	00 - 7F (0 - 127)	
	Release Rate Variation	6p	4g	kk	01	00 - 7F (0 - ±127)	
	Physical Contact Number	6p	5g	kk	01	00 - 02 (1, 2, 3)	
	Physical Contact Delay	6p	6g	kk	01	00 - 7F (0 - 127)	

SYSTEM PARAMETERS

Category	Parameter	SysEx Address			SysEx Length	Data Range	Description
		MSB to LSB					
MIDI	MIDI IN Lower/Other	70	00	00	01	Sequence, Lower, Upper	
	Local Control	70	00	01	01	Off/On	
	TRx. NRPN (P. <?>)	--	--	--	--	Off/On	
	Tx. Leslie Param.	70	00	02	01	XK/21	
	Rx. Dump	70	00	03	01	Off/On	
	TRx. Prog. Change	70	00	04	01	Off/On	
	TRx. Drawbar Regi.	70	00	05	01	Off/On	
	Tx. Ext. Zone	70	00	06	01	Off/On	
	Tx. Ext. Zone Program	70	00	07	01	Off/On	
	Tx. Ext. Zone Control	70	00	08	01	Off/On	
	Tx. Multi Contact	70	00	09	01	Off/On	
	Tx. Channel Upper	70	00	0A	01	1 - 16, Off	
	Tx. Channel Lower	70	00	0B	01	1 - 16, Off	
	Tx. Channel Pedal	70	00	0C	01	1 - 16, Off	
	Rx. Multi Contact	70	00	0D	01	Off/On	
	Rx. Channel Upper	70	00	0E	01	1 - 16, Off	
	Rx. Channel Lower	70	00	0F	01	1 - 16, Off	
	Rx. Channel Pedal	70	00	10	01	1 - 16, Off	
	Device ID	--	--	--	--	1 - 32	
Assignable Drawbars	Control Zone	72	00	0g	01	00 - 05 (Ext. U1 to P1)	g: Footage (0 = 16’, 1 = 5 1/3’... 8 = 1’)
	Control Change	72	01	0g	01	0 - 59 (CC#1 - 31, 65 - 95)	
Power	Auto Off	71	00	00	01	Disable, 30 min	
Ext. Leslie	Channel(s)	71	00	01	01	1, 3	

UPPER A♯

Bass 16´	Strings 16´	Flute 8´	Oboe 8´	Trumpet 8´	Strings 8´	Flute 4´	Piccolo 4´	Strings 4´	Farf
16´	8´	4´	2´	II	III	IV	∿	⋀⋀	Vx.
Bourdon 16´	OpenDiap 8´	Gedeckt 8´	VoixClst II	Octave 4´	Flauto 4´	Flute 2´	Mixture III	Hautbois 8´	Pipe

UPPER B

Bass 16´	Strings 16´	Flute 8´	Oboe 8´	Trumpet 8´	Strings 8´	Flute 4´	Piccolo 4´	Strings 4´
16´	8´	4´	2´	II	III	IV	∿	⋀⋀
Bourdon 16´	OpenDiap 8´	Gedeckt 8´	VoixClst II	Octave 4´	Flauto 4´	Flute 2´	Mixture III	Hautbois 8´

PEDAL

Bass 16´+8´	PrncChorus Mixture

LOWER A♯

Bass 16´	Strings 16´	Flute 8´	Oboe 8´	Trumpet 8´	Strings 8´	Flute 4´	Piccolo 4´	Strings 4´	Farf
16´	8´	4´	2´	II	III	IV	∿	⋀⋀	Vx.
Principal 16´	Principal 8´	Melodia 8´	RohrFlute II	Prestant 4´	Flute 4´	SuperOctave 2´	Mixture III	Trompette 8´	Pipe

LOWER B

Bass 16´	Strings 16´	Flute 8´	Oboe 8´	Trumpet 8´	Strings 8´	Flute 4´	Piccolo 4´	Strings 4´
16´	8´	4´	2´	II	III	IV	∿	⋀⋀
Principal 16´	Principal 8´	Melodia 8´	RohrFlute II	Prestant 4´	Flute 4´	SuperOctave 2´	Mixture III	Trompette 8´

These templates indicate Voices and Footages for the "Farf," "Vx" and "Pipe" Drawbar Organ Types. If you wish, you may copy and cut these, and place them in front of the Drawbars on the top panel.

NOTE: Be sure to use "removable" tape when affixing these templates. Using regular transparant or "magic" tape may damage the finish.

CUSTOM SETS LIST

CUSTOM TONE WHEELS

A-100, B-3, C-3

F1: Normal

Simulates the organ's Tone Wheels with precision.

F2: Rumble less

Cut off the motor rumble by using high-pass filter.

F3: Mixture

Sounds leakage tones with harmonized.

Mellow

F1: Full Flats

Like the electronic organ, oscillates at flatly.

F2: Husky

Dips the middle frequency.

F3: Flute Lead

Boosts the middle frequency.

CUSTOM CONTACT

F1: B-3 A27563

Simulates the organ as above.

F2: Regular

Physical contact 1 sounds 8′, 2′, 1′
Physical contact 2 sounds 5-1/3′, 2-2/3′, 1-1/3′
Physical contact 3 sounds 16′, 4′, 1-3/5′

F3: Single

All the footages sounds at deepest physical contacts.

CUSTOM SUB DRAWBARS

F1: B-3 A27563

F2: B-3 #87396

F3: A-100 #33339

All the customs simulates the organs as above.

CUSTOM PIPES

Normal

A basic, general-purpose Pipe set.

No Chiff

Similar to Normal, but with reduced Chiff.

Heavy Detune

Pipe Voices intentionally detuned for a "chorus" effect.

CUSTOM CABINETS

122 Gentle

Simulates 122 cabinet (Large body, peaking horn driver) heard from a distance, rear.

122 Wild

Simulates 122 cabinet heard from closer, front.

31H-Type

Simulates 31H cabinet heard from a distance, rear.

147 Gentle

Simulates 147 cabinet (Large body, wide range) heard from a distance, rear.

147 Wild

Simulates 147 cabinet heard from closer, front.

145 Gentle

Simulates 145 cabinet (Middle body, slightly narrow range) heard from a distance, rear.

145 Wild

Simulates 145 cabinet heard from closer, front.

PR-40

Simulates a stationary speaker system.

Drawbar Keyboard
Model: XK-5

MIDI Implementation Chart

Date: 27-Nov-2014
Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	*1	*1	*1: Upper = 1, Lower = 2,
	Changed	1 - 16	1 - 16	Pedal = 3
Mode	Default	3	3	
	Messages	X	X	
	Altered	*****	X	
Note Number		12 - 120	36 - 96	
	: True Voice	*****	36 - 96	
Velocity	Note ON	O	O	
	Note OFF	X	X	
After Touch	Key's	X	X	
	Ch's	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	O	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
	69	O	O	Sustain
	92	X	O	Leslie Fast
	98, 99	O	O	NRPN MSB, LSB
Program Change		O	O	
	: True #	0 - 127	0 - 99, 126, 127	Patches, Adjust A♯, B
System Exclusive		O	O	
System Common	: Song Position	X	X	
	: Song Select	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	X	
	: Commands	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 CHANNEL AND MESSAGE

	External Zone (Tx. only)	Upper Part	Lower Part	Pedal Part
Note	O	O	O	O
Pitch Bend	X	X	X	X
Modulation	X	X	X	X
Volume (7)	O	O *1	X	X
Pan (10)	O	X	X	X
Expression (11)	O	O *1	X	X
Hold 1 (64)	O	O	O	O
Hold 2 (69)	X	O	O	X
Drawbar Reg.	X	CC#80, 12 - 20 (Upper) 21 - 29 (Lower) 33, 35 (Pedal)	CC#81	CC#82
Spring Shock (48)	X	O	X	X
Leslie Fast (92)	X	O	X	O
RPN (100, 101)	X	X	X	X
NRPN (98, 99)	X	O	X	X
All Notes Off (123)	O	O	O	O
All Sounds Off (120)	X	O *2	O *2	O *2
Reset All Ctrl. (121)	O	O	O	O
After Touch	X	X	X	X
Bank Select (0, 32)	Change the voice for each zone.	Patch	Patch	X
Program Change				X

*1: Works for all parts (audio controlled)

*2: For Rx. only.

SPECIFICATIONS

Sound Generator

MTW I(Modelled Tone Wheel I)
61 polyphony (for manual)
3 polyphony (for pedal)

Keyboards

73 (61 + 12 Preset Keys)
Square-front (“waterfall”-style)
Virtual Multi Contact

Harmonic Drawbars

Drawbars

Upper: 2 x 9 Pitches
Lower: 2 x 9 Pitches
Pedal: 2 Pitches

Voicing

Manuals: 7 choices (A-100, B-3, C-3, Mellow, Vx, Farf, Pipe)
Pedal: Normal, Muted
Virtual Multi Contact (A-100, B-3, C-3, Mellow only)

Touch Response Percussion

Buttons

Percussion On, Third Harmonic, Fast Decay, Volume Soft

Adjustable

Touch, Velocity, Decay (Fast, Slow), Level (Normal, Soft)

Effects

Vibrato and Chorus

Digital Scanner

Tube Pre-Amp

Device: 12AX7, 12AU7
Adjustable: Routing, Level

Overdrive

Control: On, Depth

Multi Effects

8 programs

Equalizer

Bass, Mid, Treble, Tone

Internal Leslie

Advanced Digital, 2 Rotors
Buttons: Bypass, Stop, Fast

Reverb

Digital, 11 programs
Control: On, Depth
Leslie On Reverb

Master Equalizer

Bass, Mid, Treble

Keymap

Buttons

Pedal To Lower, Split, Transpose, Octave Down, Octave Up, Lower

Adjustable

Coupler Highest note, Split Point

Patches

Capacity

100 User Patches, 100 Factory Patches, Adjust Preset A#/B

Favorites

10 Keys

Patch Load Options

Drawbar Registration, Drawbar Parameters, Internal Zone, External Zone, Effects, Reverb

Controllers

Volume

Master Volume

Switch

Power On/Off

Storage

USB Flash Drive

Display

20 - Characters, 2 - Lines
7 Control Buttons and Value knob

MIDI

Templates

5 Templates

Zones

3 External Zones (Upper)
2 External Zones (Lower)
1 External Zone (Pedal)
and Keyboard Channels:
Upper, Lower, Pedal

Connections

MIDI

In (Pedal), In (Lower/Other), Out

USB

To Host

H-Bus

To Keyboard/Pedal (0.3A max)

Audio

Line Out L/Mono, R, Headphones (Rear, Bottom)

Leslie

11 - pin, 1 and 3 channels available

Others

Leslie Switch, Foot Controller 1, 2, Exp. Pedal, AC Inlet

Dimensions

119(W), 40(D), 12(H) cm
46.8″(W), 15.8″(D), 4.7″(H)

Weight

15.7 kg
34.6 lbs

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SERVICE

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 Manual, total accuracy cannot be guaranteed.

Should the owner 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:

HAMMOND SUZUKI USA, Inc.
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Web site: www.hammondoraganco.com

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Web site: www.hammond.eu

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Web site: www.suzuki-music.co.jp

Technical materials are available and can be obtained by mailing a request to the appropriate address listed above marked ATTENTION: SERVICE DEPARTMENT.

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