



IMPORTANT SAFETY INSTRUCTIONS

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

	WARNING	This sign shows there is a risk of death or severe injury if this unit is not properly used as instructed.
	CAUTION	This sign shows there is a risk of injury or material damage if this unit is not properly used as instructed.

*Material damage here means a damage to the room, furniture or animals or pets.

WARNING



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



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



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



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



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



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



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



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



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



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



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



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



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



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



CAUTION



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



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



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



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



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



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



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



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



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



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

IMPORTANT - 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).
- ◆ The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.
- ◆ 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.

◆ **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.

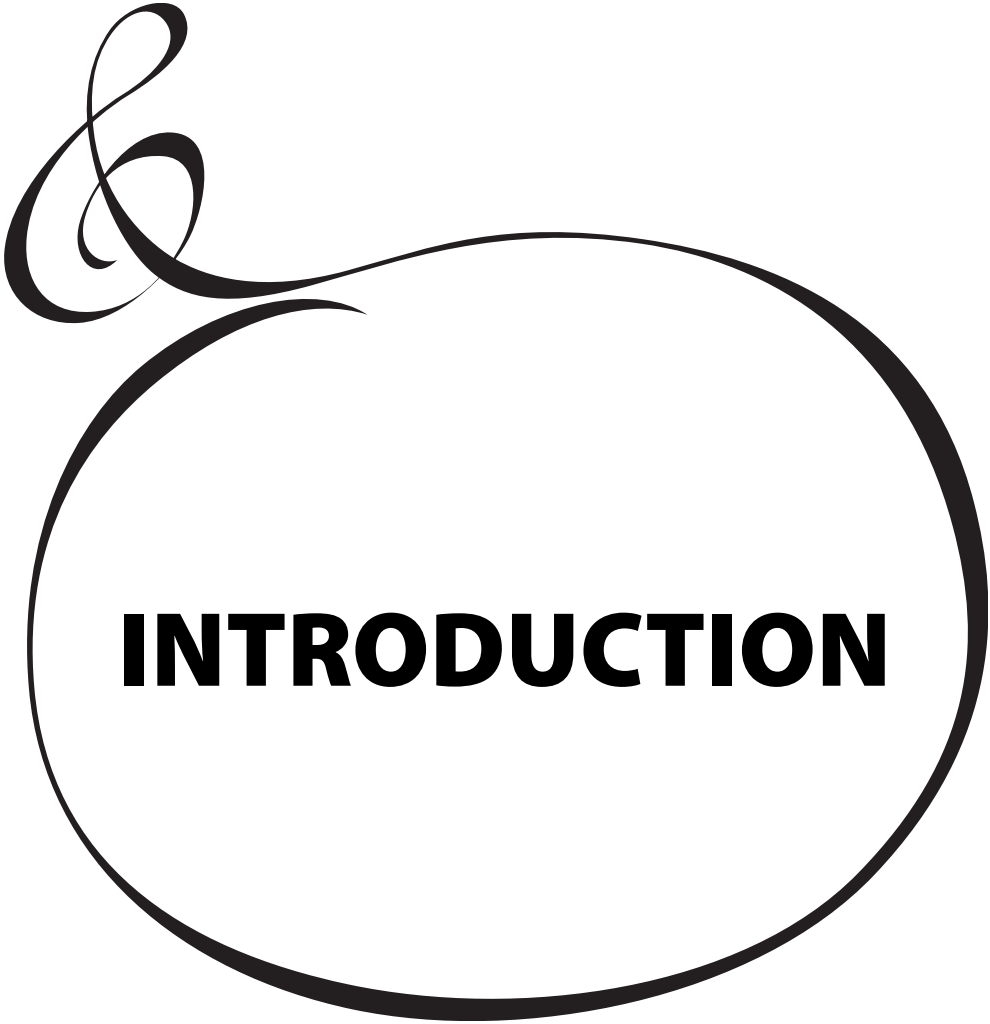
◆ **Maintenance**

- ◆ 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.

A decorative graphic featuring a black treble clef on the left side. A thick black line starts from the bottom of the clef, curves around to form a large, empty circle. The word "INTRODUCTION" is centered within this circle in a bold, black, sans-serif font.

INTRODUCTION

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◆ **AUTHENTIC HAMMOND DRAWBAR ORGAN**

The XK-1C is first and foremost a genuine HAMMOND organ with Virtual Tone-Wheels to provide its traditional sound. Also available are the tones of vintage “combo” organs, and a variety of pipe organ ranks to provide church and classical organ voices.

◆ **DIGITAL LESLIE/VIBRATO**

A digital and programmable LESLIE is available for the Drawbar voices, as well as the traditional “Chorus-Vibrato” as used on the legendary B-3. The Chorus-Vibrato may be selected for the Upper and Lower manuals, independently.

◆ **A WIDE VARIETY OF EFFECTS**

Digital Multi-effects are available. A Master Equalizer allows you to tailor the total tonal response of the keyboard.

◆ **MIDI MASTER KEYBOARD**

External Zones are available to enable the XK-1C to be used as a master keyboard.

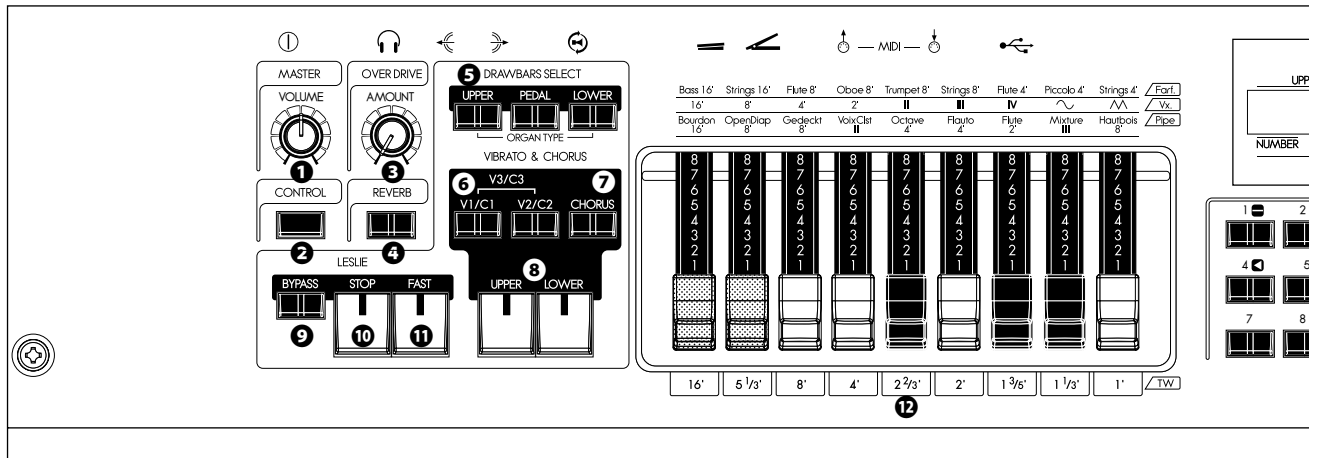
◆ **PATCHES AND FAVORITES**

In addition to the 64 available user-defined patches, 8 “Favorite” quick-call patches are available for on-stage ease.

◆ **SMALL AND LIGHT WEIGHT**

The XK-1C is small and light weight, making transport and setup easy.

TOP PANEL



◆ UPPER LEFT

① MASTER VOLUME knob

Controls the total volume. (P. 22)

② CONTROL button

Brings the CONTROL window up in the display. Shortcut to user-programmed parameter, also. (P. 72)

③ OVERDRIVE AMOUNT knob

Adjusts the amount of the Overdrive effect. (P. 48)

④ REVERB ON button

Switches the Reverb ON/OFF. (P. 50)

◆ DRAWBAR SELECT

⑤ UPPER, PEDAL, LOWER buttons

Used to select which division (Upper/Lower/Pedal) the Drawbar settings will affect while editing or playing live. The indicator light shows which selector is “live”. (P. 45)

◆ VIBRATO & CHORUS

⑥ V1/C1, V2/C2 buttons

Controls the depth of the classic “Vibrato & Chorus” effect. 1 is light, 2 is medium, and pressing both buttons selects 3 which is maximum. (P. 47)

⑦ CHORUS button

Toggles between Vibrato and Chorus effect. (P. 47)

⑧ UPPER, LOWER buttons

Selects which division (or both) receives the Vibrato & Chorus Effect. (P. 47)

◆ LESLIE

⑨ BYPASS button

De-selects the Leslie effect and directs the output to the Main outputs. When the indicator light is ON, the Bypass is engaged. (P. 49)

⑩ STOP button

Sets the STOP or SLOW then the [FAST] button is off. When the light is ON, the [FAST] button toggles STOP/FAST. And

when the light is OFF, it toggles SLOW/FAST (P. 49)

⑪ FAST button

Toggles the modes of the rotors FAST or not. When the light is ON, it is FAST. (P. 49)

◆ DRAWBARS

⑫ DRAWBARS

These are for adjusting the basic harmonics of the organ section. The function of each drawbar is different depending on the keyboard selected (Upper/Lower/Pedal) of type of Organ (Transistor/Pipe). (P. 38)

◆ PERCUSSION

⑬ ON button

Adds percussion (decay) to the UPPER part. (P. 46)

⑭ THIRD button

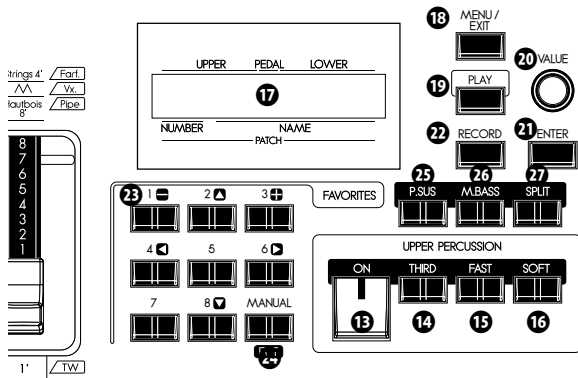
Switches the harmonic between second (4') and third (2 2/3') percussion (decay) to the UPPER part. (P. 46)

⑮ FAST button

Switches the decay time of the percussion. (P. 46)

⑯ SOFT button

Switches the percussion volume. (P. 46)



HAMMOND

◆ CONTROL PANEL

17 DISPLAY

18 MENU/EXIT button

Recalls the Menu mode in the display. Also used for returning to the Menu mode from other function modes. (P. 60)

19 PLAY button

Returns to the Play, or basic mode. (P. 59)

20 VALUE knob

Increases/Decreases Patch numbers while performing or adjusts values during editing.

21 ENTER button

Confirms the current entry or procedure.

◆ FAVORITES

22 RECORD button

Enables recording of user-definable items. (P. 32)

23 NUMBER / DIRECTION buttons

Recalls the corresponding Favorites. (P. 24)

In the menu mode and function mode, moves the cursor or pages (P. 60), increases/decreases the value (P. 62).

24 MANUAL button

Dismisses any current Patch or Favorite in favor of the current settings of the control panel. (P. 27)

In the menu mode, this button functions as [ENTER]. (P. 60)

◆ KEYBOARD CONTROL

25 P. SUS (Pedal SUSTain) button

Switches the Pedal Sustain on. (P. 31)

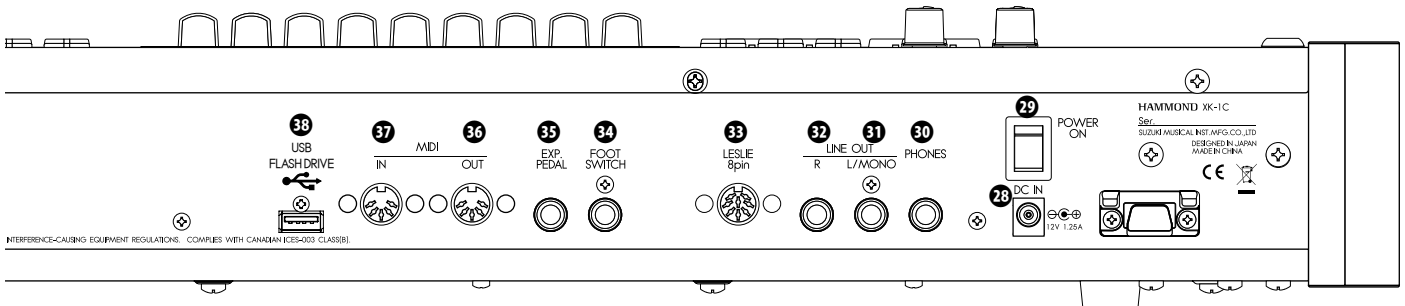
26 M. BASS (Manual BASS) button

Switches the Manual Bass on. (P. 30)

27 SPLIT button

Divides the XK-1C keyboard into UPPER and LOWER. (P. 30)

REAR PANEL



◆ POWER

28 DC IN jack

Connect the AC adaptor AD3-1250 to this jack.

29 POWER switch

◆ SOUND OUTPUT TERMINALS

30 PHONES jack

Connect stereo headphones here.

Connecting Headphones does NOT mute the Line or Leslie Outputs.

31 LINE OUT L/MONO jack

32 LINE OUT R jack

These are the sound output jacks.

If the connected mixer or monitor speaker is stereophonic, connect both L and R. If monaural, connect only to the L/MONO terminal (P. 16) and set the Audio Mode at “MONO” (P. 97).

33 LESLIE 8 PIN jack

Connect a Leslie Speaker equipped with an eight-pin jack here.

When the connection of a external Leslie Speaker is detected, the on-board Leslie effect is disabled to the PHONES jack (30) and the LINE OUT jacks (31, 32). (P. 17)

◆ CONTROLLER TERMINALS

34 FOOT SWITCH jack

Connect the Foot Switch (optional FS-9H etc.) or, Leslie mode Switch (optional CU-1) here.

Consult (P. 72) to learn the different functions available for the foot switch.

35 EXP. PEDAL jack

Connect the Expression Pedal (optional EXP-50 etc.) here.

Controls volume while you are playing. (P. 72)

◆ MIDI TERMINALS

36 MIDI OUT jack

MIDI data is output from this jack. (P. 100)

37 MIDI IN jack

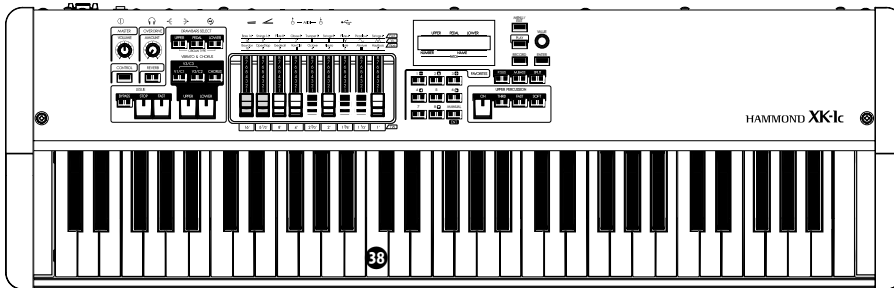
MIDI data received here. From the factory, this terminal is set to receive channels from a lower manual and pedalboard. (P. 100)

◆ USB TERMINAL

38 USB FLASH DRIVE jack

This Jack is for connecting a USB Flash drive. (P. 112)

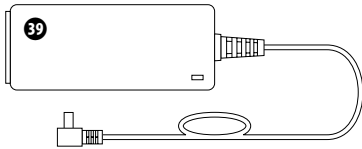
KEYBOARD



38 Keyboard

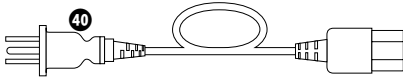
61 waterfall keys, velocity sensitive.

ACCESSORIES



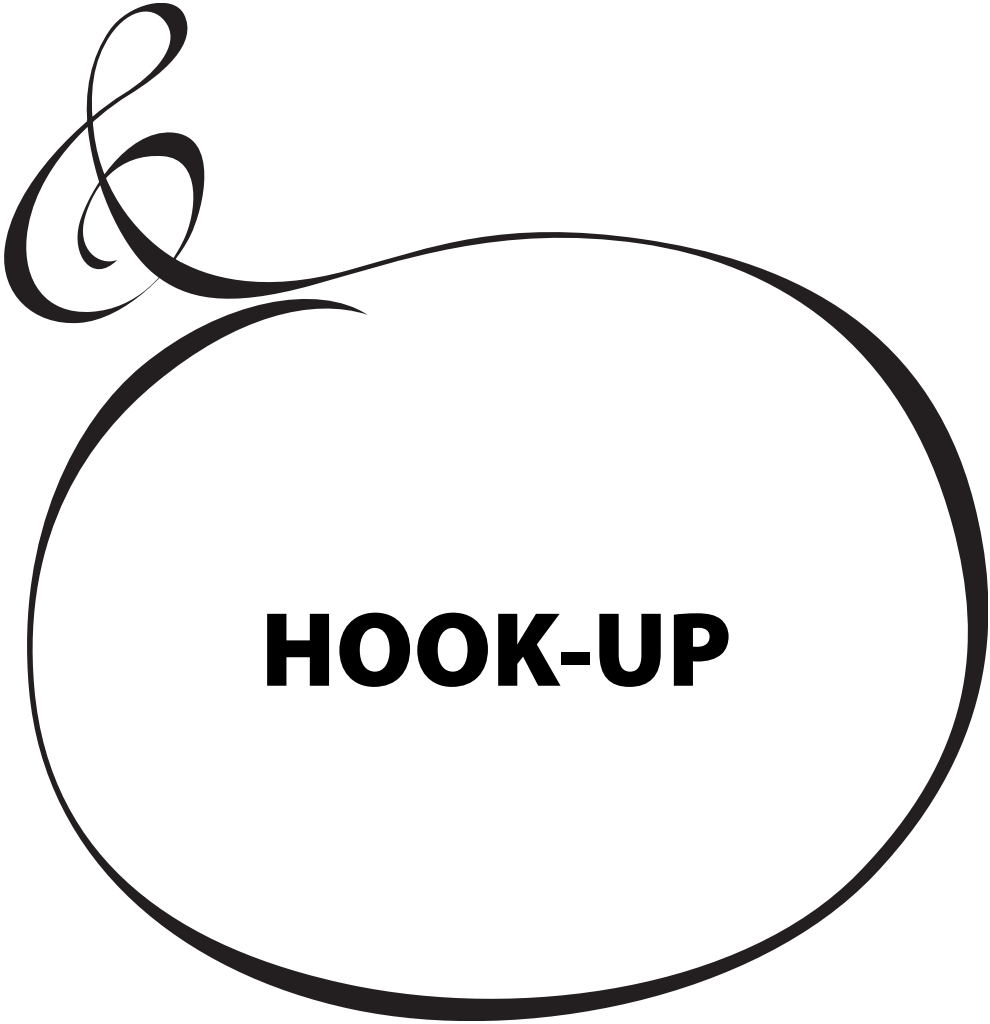
39 AC adaptor

Supplies power to the instrument - USE ONLY AD3-1250, DO NOT SUBSTITUTE!



40 AC cord set

Attaches AC adapter to Wall outlet.

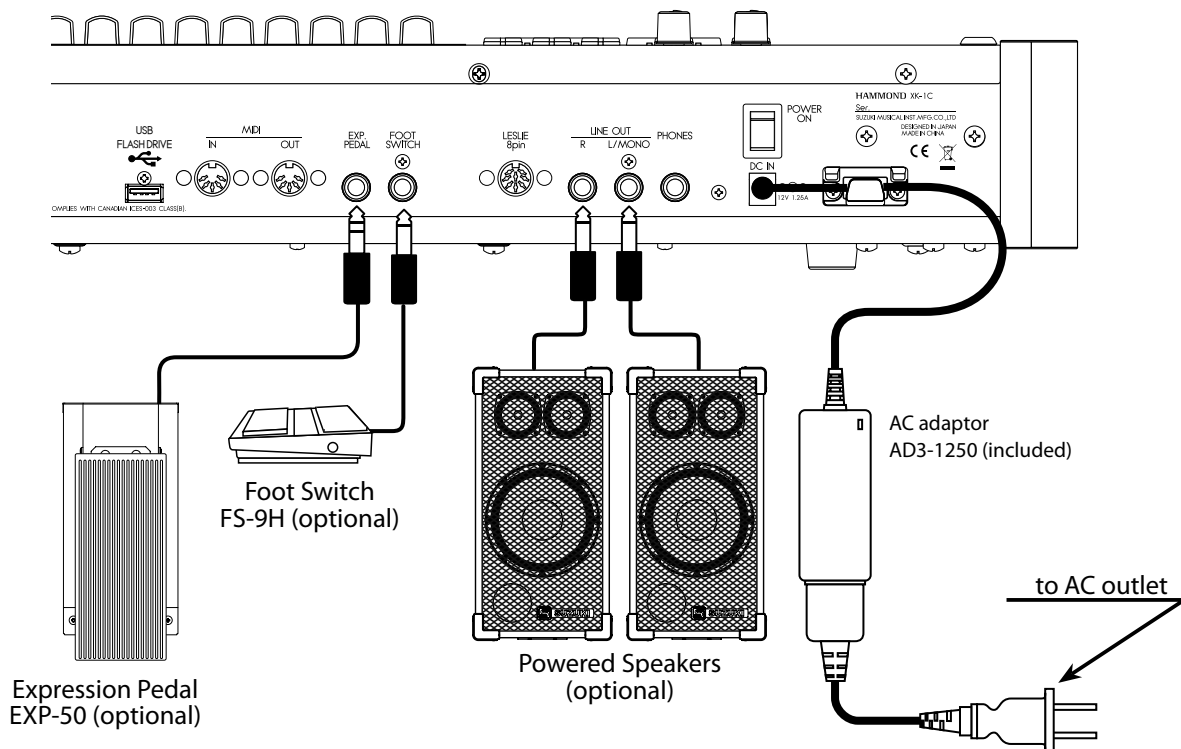


BASIC HOOK-UP

Attach cables and accessories as illustrated.

There is no on-board amplification or speaker system. An external amp/speaker is required. When the stereo headphones are connected to the PHONES jack, you can enjoy playing it or practising by yourself.

Switch this keyboard, and any external equipment OFF before connecting amps or headphones.



The Expression Pedal and Foot Switch parameters must be set properly. For details see [CONTROL] (P. 72)

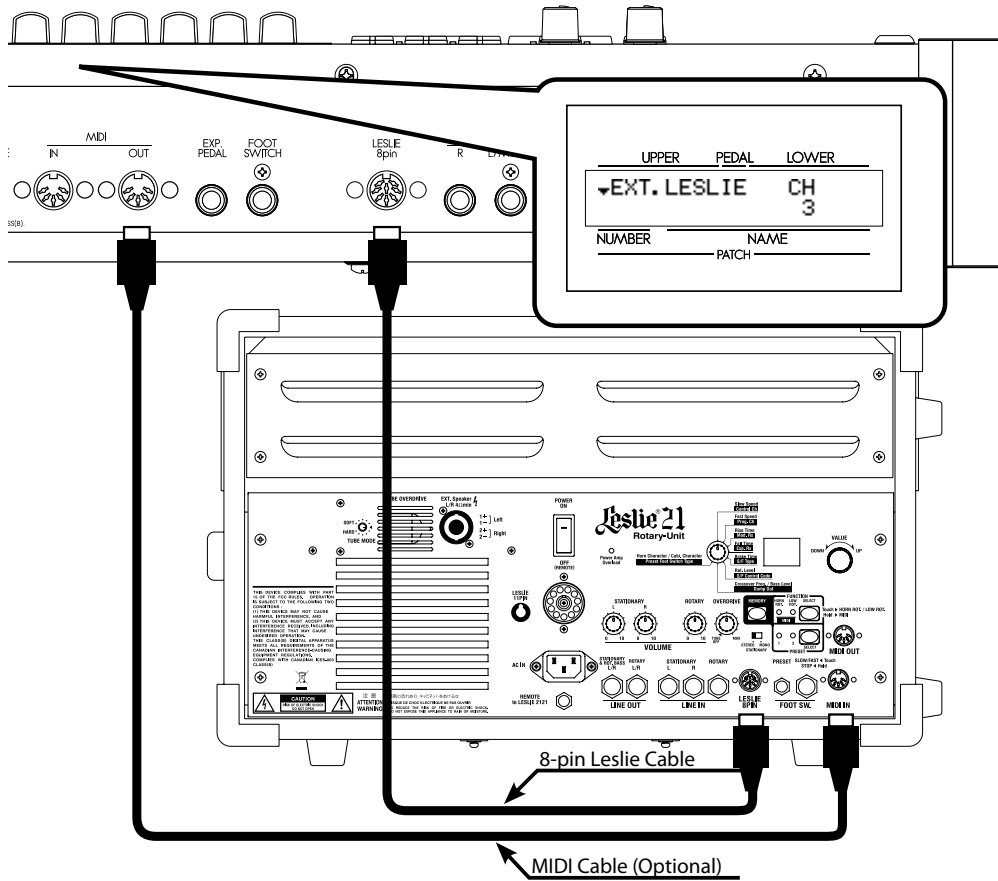
Select Audio Mode for stereo or mono connection (P. 97)

⚠ CAUTION

Do not place this unit in direct sun light, near heat sources, or in a hot location.

An 8-pin type Leslie speaker can be directly connected to this keyboard.

❖ Switch keyboard OFF before connecting the Leslie speaker.



BASIC CONNECTION OF THE LESLIE SPEAKER

Connect the Leslie Speaker #2101, or #2101mk2 and the Leslie 8-PIN jack on this keyboard with the exclusive 8-pin Leslie cable (optional LC-8-7M, not included).

NOTE: The Leslie terminal on this unit is of 8-pin specifications. Use the Leslie adaptor XLD-811 (optional) to connect a 11-pin spec. Leslie speaker e.g. #122XB.

1. Make the setting of Tone-Wheel organ.
2. Switch "ON" the [BYPASS] button, set the [STATIONARY VOLUME] of the #2101/mk2 at desired volume.
3. Repeat "ON/OFF" the [BYPASS] button with playing the keyboard, set the [ROTARY VOLUME] of the #2101/mk2 at same volume which you can hear.

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 this unit with the MIDI IN of the Leslie speaker with a MIDI cable.
2. Set the keyboard channel - UPPER and the Leslie MIDI channel to the same channel. (P. 109)

When this unit detects that the Leslie speaker is connected, the Leslie parameters sent through MIDI from this unit are switched from the XK-1C original to those for the Leslie speaker.

tips LESLIE SPEAKERS TO BE CONNECTED

This keyboard is designed to connect with 3 channel Leslie speakers such as the model #2101. However, it is also possible to connect 1 channel type Leslie speakers such as #3300 sending the stationary channels to the LINE OUT jacks independently. (P. 80)

tips LESLIE CHANNEL

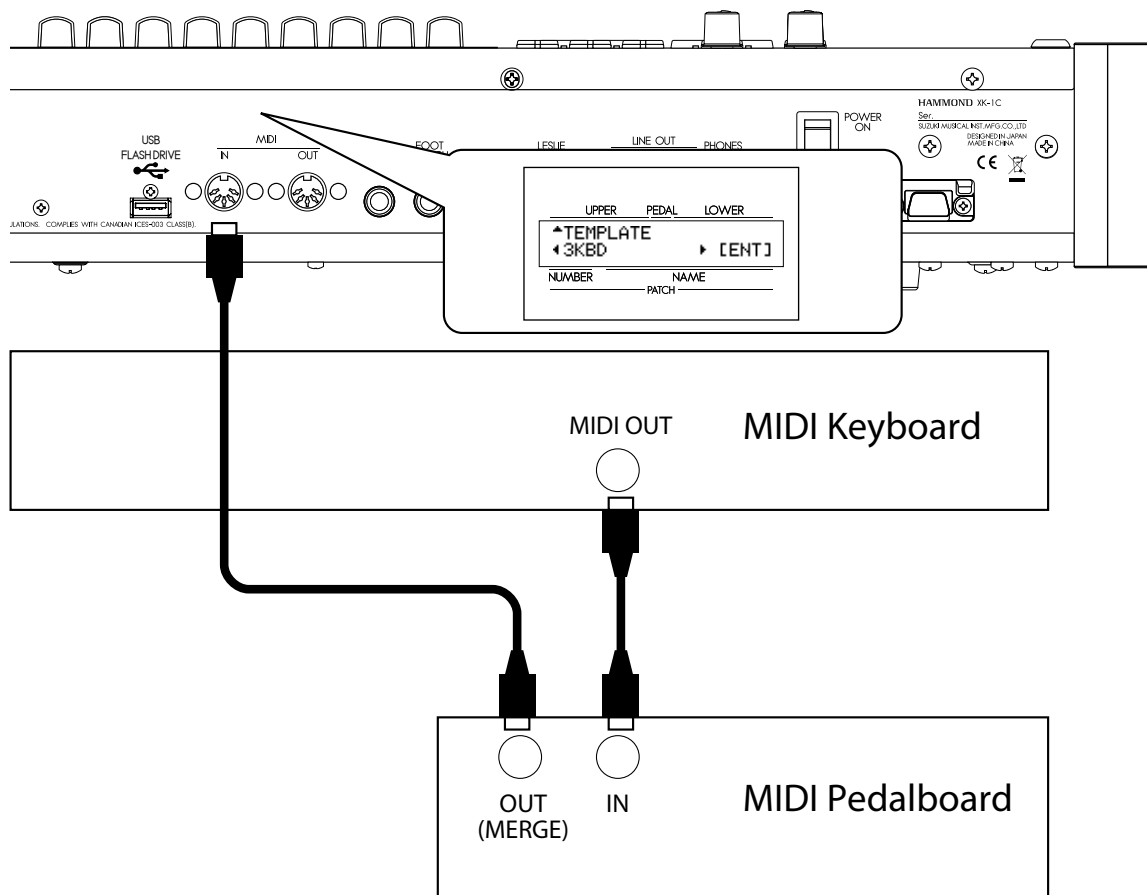
3 channel type Leslie speakers are equipped with a stereo speaker system, independent of the rotor, to provide direct organ sounds.

A traditional 1-channel Leslie, such as a #122 or #147 has no stationary speaker system, requiring a separate amplifier/speaker for the direct organ sounds.

EXPAND THE KEYBOARD

This instrument can be upgraded to dual keyboards by connecting an external MIDI keyboard and pedalboard.

DUAL KEYBOARD + PEDALBOARD



1. Connect as illustrated above. There is only one MIDI IN jack onboard this instrument, so a MIDI keyboard with a merge function or a MIDI Merge-box is necessary for realizing a dual keyboard configuration.

NOTE: This illustration shows only the keyboard expansion. See P. 16 for the basic hook up of the power source, audio, etc.

2. Turn the XK-1C power ON. Then recall the MIDI template "3KBD". (P. 108)
3. Set the Send channel of the added MIDI keyboard at "2" and that of the MIDI pedalboard at "3".

Refer to the operation manual of the added MIDI keyboard and pedalboard, as required.

◆ RECOMMENDABLE MIDI KEYBOARD

The following HAMMOND MIDI pedalboards (compliant with the XK-1C) are available from our sales dealers:

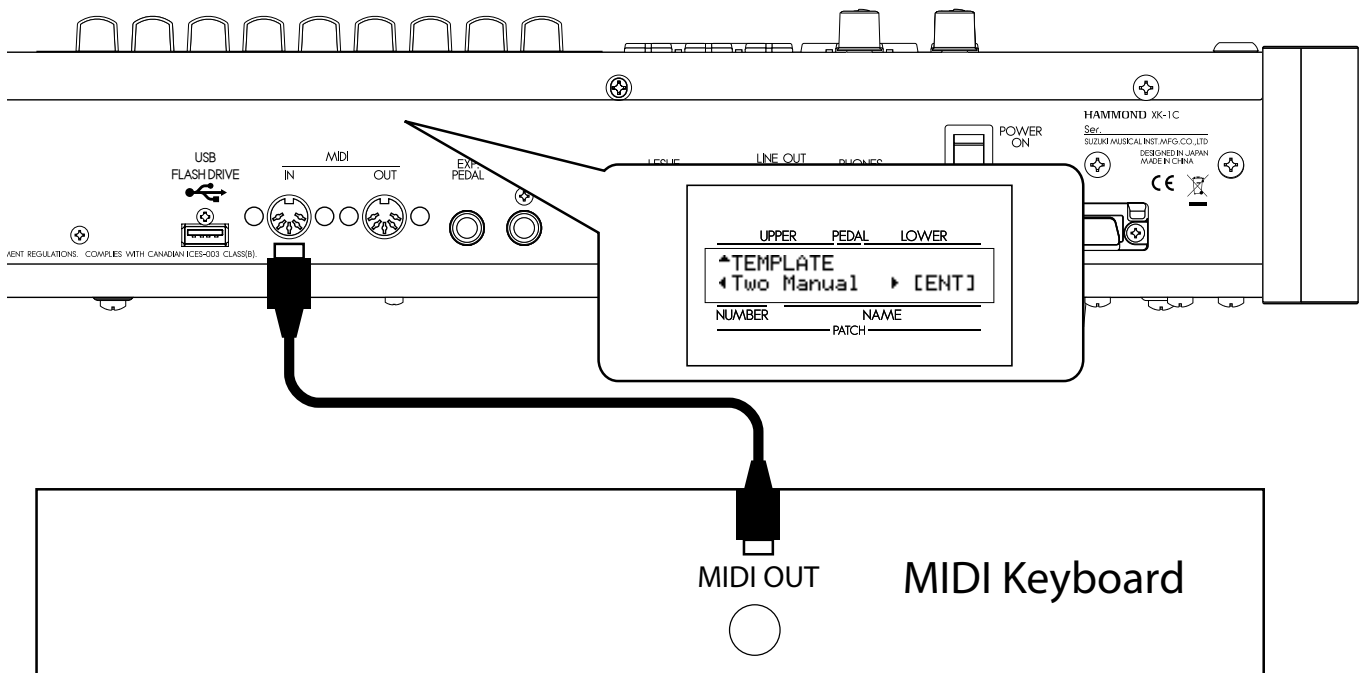
- ◆ MIDI pedalboard XPK-100 (13 keys)
- ◆ MIDI pedalboard XPK-200 (20 keys), XPK-200L (20 long keys)

These three models have a MIDI merge function.

tips HOW MIDI KEYBOARD WORKS?

On the XK-1C, connected MIDI keyboard works as "LOWER" keyboard when the MIDI template recalled at "3KBD" or "Two Manual".

DUAL KEYBOARD



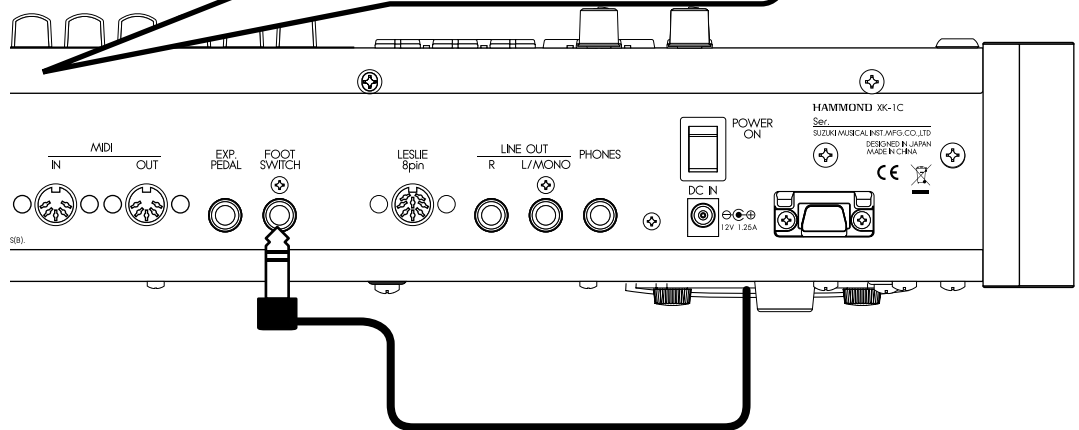
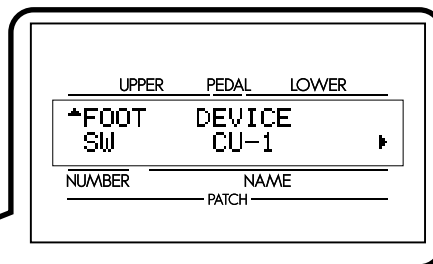
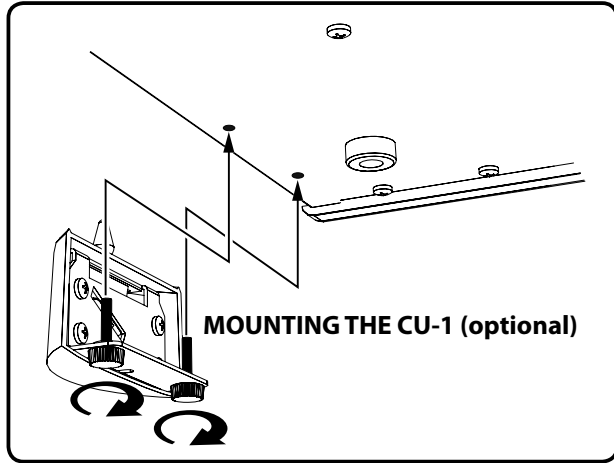
1. Connect as illustrated.

NOTE: This illustration shows only the keyboard expansion. See P. 16 for the basic hook up of the power source, audio, etc.

2. Switch ON the power of this unit. Then recall the MIDI template “Two Manual”. (P. 108)

Refer to the operation manual of the added MIDI keyboard as required.

USING CU-1 LESLIE SWITCH



1. Connect the CU-1 to the FOOT SWITCH jack.

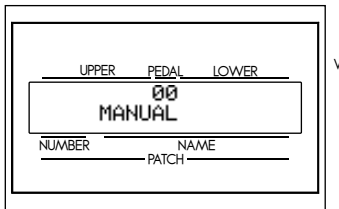
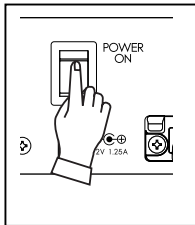
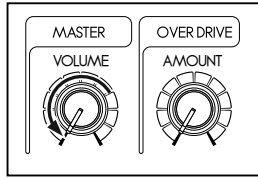
NOTE: This illustration shows only the keyboard expansion. See P.16 for the basic hook up of the power source, audio, etc.

2. Set the CONTROL - FOOT DEVICE" at "CU-1". (P. 72)



SWITCH ON

HOW TO POWER ON



After making the necessary connections, follow the procedures below for powering on your XK-1C. Please be sure to adhere to the procedure, to prevent malfunction or damage.

◆ PROCEDURES

1. Before switching the power ON, set the [MASTER VOLUME] knob to minimum.
2. Switch ON the [POWER] (on the rear of this keyboard). The Title mode and then the Play mode are displayed (as illustrated).
 - ❖ For protecting the circuits, the keyboard is designed not to play immediately at the power on (about 6 seconds).
3. Switch ON the connected amplifier etc.
4. Play a bit, raising the [MASTER VOLUME] knob to adjust the volume to your needs.
 - ❖ The [MANUAL] button does not sound in the default settings. Pull some Draw-bars or select any of the FAVORITE [1] to [8] buttons to test your volume.
5. Adjust the volume of amplifier etc.
 - ❖ To turn OFF the power, do the above steps in reverse. (Switch OFF the amplifier etc. first.)

BACK UP

This keyboard “remembers” the unit’s status immediately before the power is turned off, returning the unit to that status upon the next power-on.

The status of the default settings are the same as when the [MANUAL] button is depressed.

RESET TO THE FACTORY SETTINGS

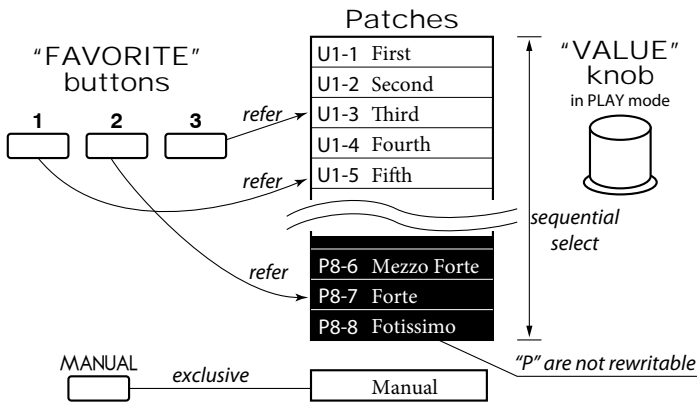
To reset all parameters of this keyboard to its default settings, perform the following steps:

◆ OPERATION PROCEDURES

1. Switch the [POWER] of this keyboard off.
2. Switch the [POWER] ON while holding the [RECORD] button.
3. Keep the button depressed until “Loading Default...” is displayed.
4. When the Play mode is displayed, this operation is completed.

There are 64 patches loaded in memory from the factory, allowing you to immediately start playing. You can also create 64 patches of your own.

USER and PRESET

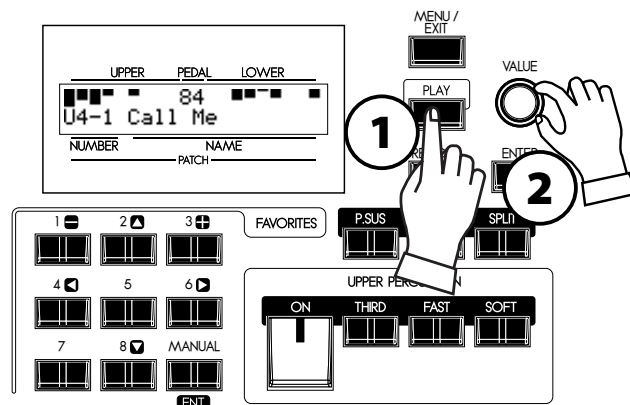


There are two domains: “USER” and “PRESET” in this keyboard’s Patch memory. You can freely overwrite in the “USER” domain, but you can not do so in the “PRESET” domain as it contains the factory settings.

“USER” and “PRESET” are indicated by “U” and “P” respectively.

HOW TO CALL A PATCH

Example: Select U4-1.



1. GO TO THE PLAY MODE

Select the PLAY button, to enter PLAY mode.

2. SELECT THE PATCH NUMBER

Select the patch number U4-1 with the [VALUE] knob. Read the [PRESET PATCH LIST] (P. 123) in the Appendix for the preset patch details.

Call various patches to play. When you call patches, not only the Drawbar registrations but the effects such as Leslie, and reverb also change.

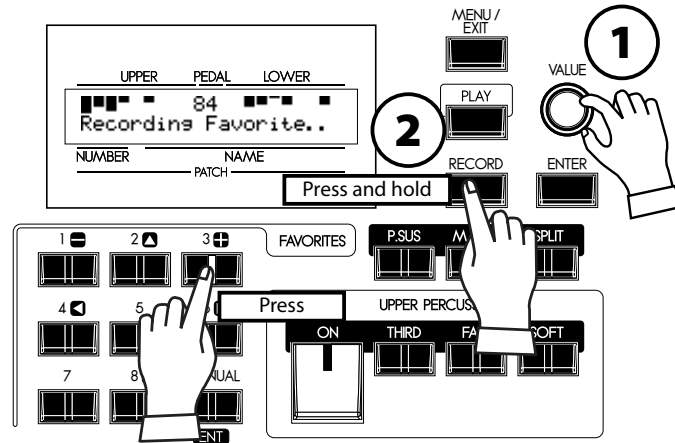
NOTE: You can set which parameters will be recalled (P. 70 #2 to 10).

NOTE: You can set the FAVORITE buttons to select a Patch with direct key-in (P. 70 #11)

REGISTER FAVORITE PATCHES (FAVORITES)

Patches are selected with the [VALUE] knob. On stage, it is convenient to have your favorite patches available immediately. Here's how:

REGISTER PATCHES TO FAVORITES



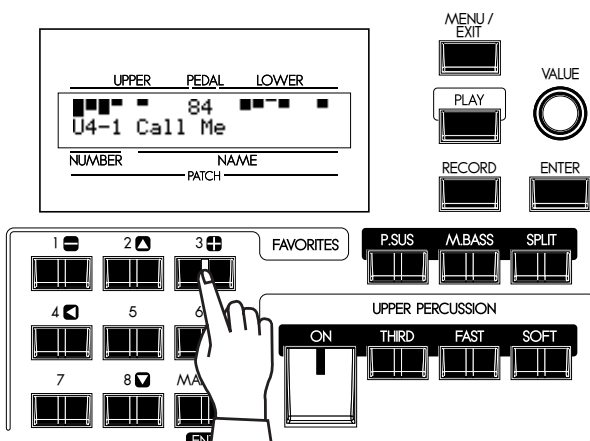
1. SELECT THE PATCH

Select the patch you want to register to a favorite button as shown on the previous page.

2. SELECT THE BUTTON TO REGISTER

Press the desired Favorite button, while holding down the [RECORD] button. "Recording Favorite.." is displayed for a moment and the selected Favorite button blinks momentarily. Your favorite is stored. Repeat as desired.

HOW TO CALL FAVORITES



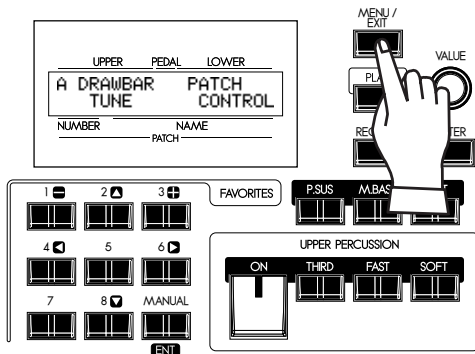
SELECT THE DESIRED BUTTON

Press the Favorite button you wish to recall. The Favorite button lights and the corresponding patch is called.

LOCKING PATCHES 1-8

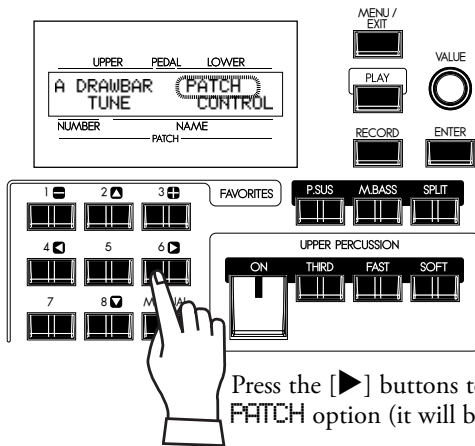
As an alternative to the associated Favorites, You can lock patches 1 through 8, and press a favorite button while holding the [RECORD] button to record the patch - by following this procedure;

1 LOCATE THE MENU MODE



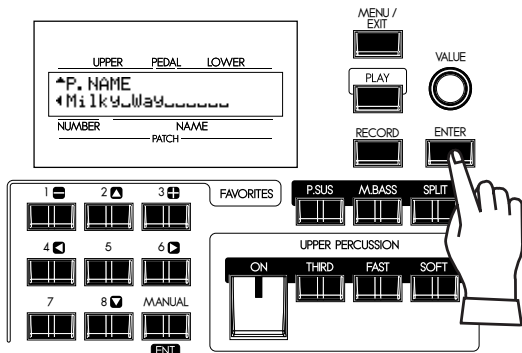
Press the [MENU/EXIT] button. The MENU mode appears. Repeat-press the menu button until the “A” menu appears (if necessary)

2 SELECT THE PATCH



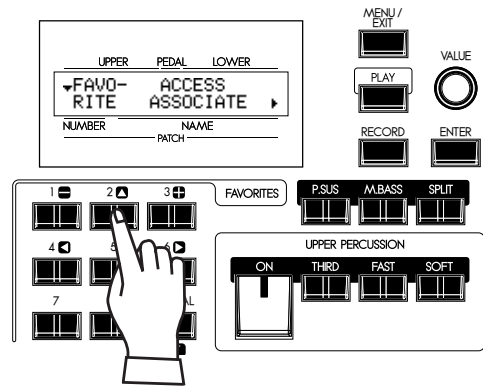
Press the [▶] buttons to select the PATCH option (it will blink).

3 ENTER



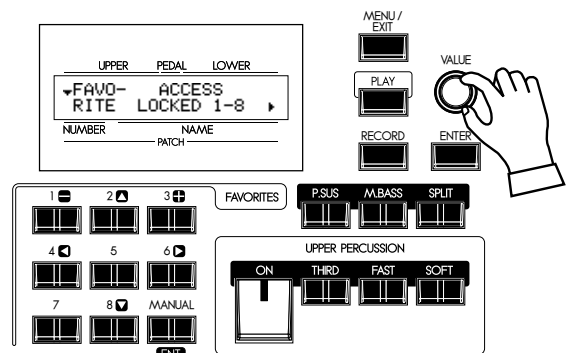
Press the [ENTER] button to select the patch function mode.

4 GO TO THE FAVORITE PAGE



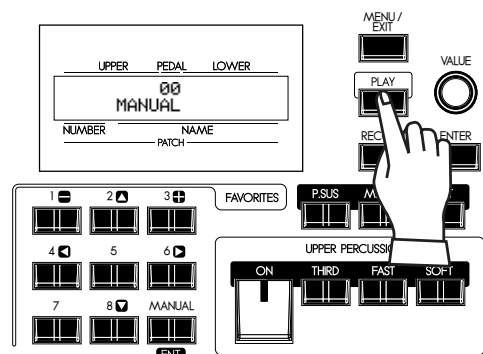
Press the [▲] button twice. The Favorite page appears.

5 SET VALUE TO LOCKED 1-8



Turn the [VALUE] knob and set the value of the item ACCESS to “LOCKED1-8”.

6 RETURN TO THE PLAY MODE

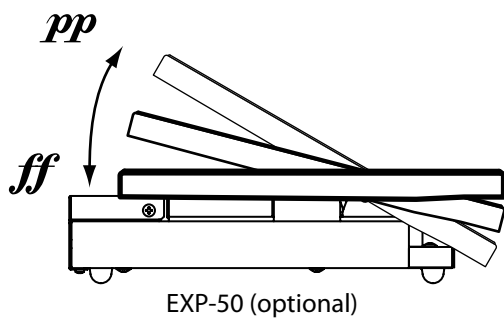


Press the [PLAY] button. Returning to the PLAY mode.

USE THE FOOT CONTROLLERS

Your performance will be more expressive, if you play on the manual using the controllers. You will see on this page how to use the controllers generally used with the electronic musical instruments. (How to use the exclusive Hammond Organ controllers is shown on the next page.)

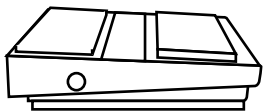
EXPRESSION PEDAL



The Expression Pedal controls the overall volume or loudness of the XK-1C. The further you depress the pedal, the louder the sound becomes; the more you pull back on the pedal, the softer it.

NOTE: The Expression pedal has specific parameters to adjust. (P. 26)

FOOT SWITCH



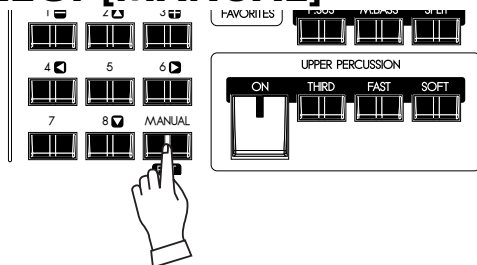
FS-9H (optional)

The foot switch can be programmed to various functions. The default setting is [LESLIE S/F ALTERNATE]. Every press toggles, the mode of the Leslie effect between Fast and not.

NOTE: You can change the foot switch assignment. (P. 72)

In this section you'll learn how to create your own sound. In this example, a Classic Jazz Organ.

SELECT [MANUAL]



First, select the [MANUAL] button (LED lit).

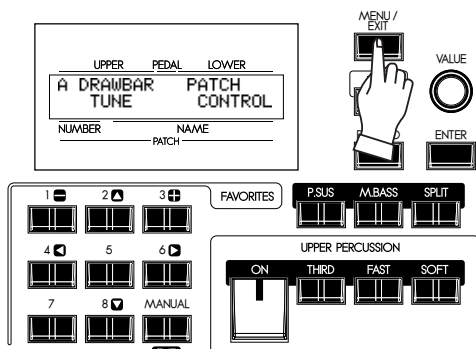
The [MANUAL] button makes all the current control panel settings active, allowing for real-time registration, and the creation of new patches.

NOTE: To return to the previous Patch, press the [MANUAL] button again (LED off).

Column: INITIALIZE THE INTERNAL SETTINGS [MANUAL]

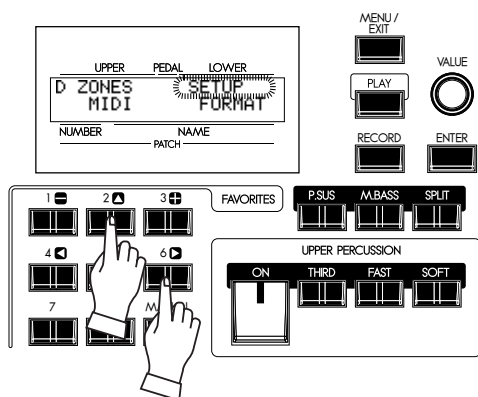
When the MANUAL button is pressed, not only do the current panel settings become active, but the internal settings do as well. This is the procedure to return them to the DEFAULT Status.

1 GO TO THE MENU MODE



Select the [MENU/EXIT] button. The Menu mode appears. If the display is different from the above illustration, select the [MENU/EXIT] button again.

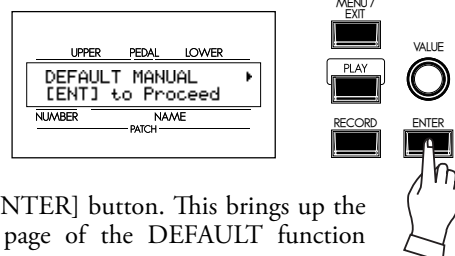
2 LOCATE PAGE D, CHOOSE DEFAULT



Press the [▲] button 4 times reaching Page D. The ZONE entry is blinking.

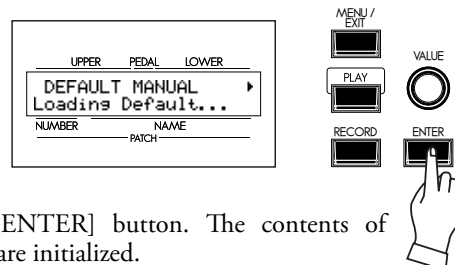
Press the [▶] button twice. The DEFAULT entry is blinking.

3 ENTER



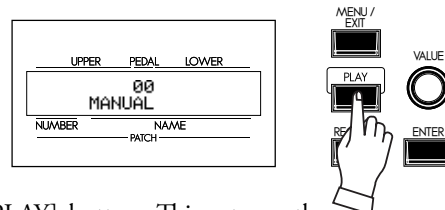
Press the [ENTER] button. This brings up the MANUAL page of the DEFAULT function mode.

4 ENTER AGAIN



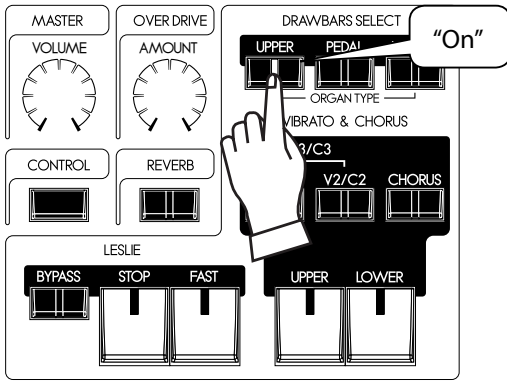
Press the [ENTER] button. The contents of MANUAL are initialized.

5 RETURN TO THE PLAY MODE



Press the [PLAY] button. This returns the XK-1C to the Play mode.

SELECT THE UPPER DRAWBARS

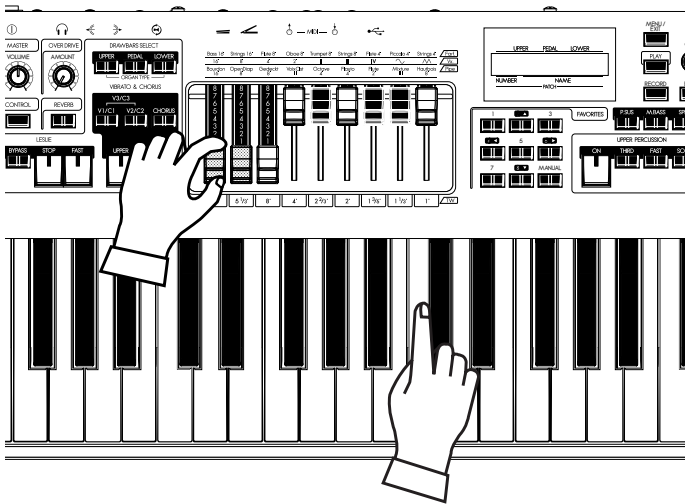


The DRAWBARS SELECT buttons are for selecting which part the Drawbars will control written below step.

NOTE: What is a "PART"? (p. 30)

Select [UPPER]. This is the basic Organ Part, the one used most frequently.

PULL OUT DRAWBARS



Pull out Drawbars to your taste. You can monitor your selections easily while playing the keyboard (the UPPER keyboard if keyboards are extended).

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

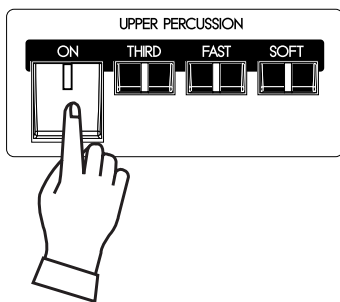
The volume of each sound is greatest when the Drawbar is pulled out all the way, and null when fully pushed back. The Drawbars are arranged so that the pitches grow higher from left to right.

For this example, pull the 16', 5 1/3' and 8' Drawbars to "8" (all the way out).

NOTE: You can change the sound character of the Drawbars. (P. 68)

NOTE: The present registration is displayed in the Play mode. (P. 59)

ADD THE TOUCH-RESPONSE PERCUSSION



Hammond's Touch-Response Percussion adds a distinctive attack to the Tone Wheel/Drawbar sounds. This percussion is not like a Drum or Cymbal, but closer to an xylophone or marimba. [PERCUSSION] is available only on the UPPER part.

To enable the percussion, turn the [ON] button on.

There are two choices of Percussion Pitch. One sounds an octave above the note played ("Second"), and another sounds a "twelfth" above. ("Third") - When the [THIRD] light is off "Second" is selected.

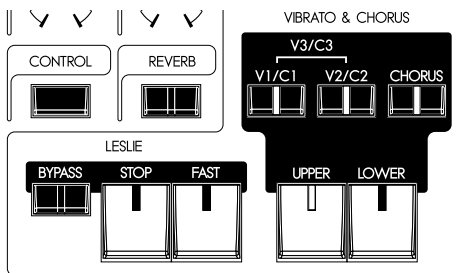
The [FAST] button quickens the decay of the Percussion voice and [SOFT] reduces the volume of the Percussion Voice.

For this example select all of the Percussion buttons [ON], [THIRD], [FAST], [SOFT].

NOTE: You can fine-tune the percussion parameters to your taste. (P. 76)

ADD EFFECTS TO THE ORGAN SECTION

VIBRATO & CHORUS



Adding the Classic Hammond Vibrato & Chorus to the sound.

[UPPER], [LOWER] buttons

Switches the Vibrato & Chorus effect ON/OFF. When ON, the light illuminates.

[V1/C1], [V2/C2] buttons

These set the depth of the Vibrato effect. When both buttons are selected, the depth becomes maximum as V3/C3.

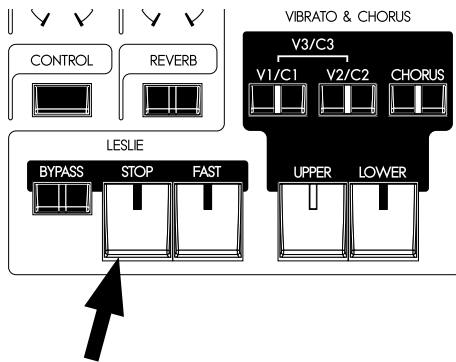
[CHORUS] button

This button changes the Vibrato to Chorus effect - Also changing the V1/V2/V3 to C1/C2/C3. When the Chorus effect is engaged the button light illuminates.

NOTE: You can fine-tune the speed of Vibrato/Chorus. (P. 77)

For this example, switch ALL of the Vibrato & Chorus buttons to “ON” (except [LOWER]).

LESLIE



The LESLIE effect is the famous “Moving and Swirling” sound provided by rotating horns and speakers, but executed here in the Digital realm.

[FAST] button

This button toggles the mode of the rotor to fast or not. When the light is ON, it is FAST, and when OFF, not.

[STOP] button

This button sets the mode when the [FAST] button is off. When the light is ON, it is STOP, and when OFF, it is SLOW.

[BYPASS] button

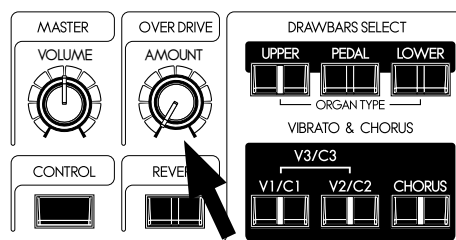
To Engage the Leslie effect, press the [BYPASS] button turning the light OFF.

NOTE: These controls perform the same functions when an external Leslie speaker is connected via the 8 pin plug.

NOTE: You can fine-tune the parameters of the on-board Leslie effect etc. (P. 78)

For this example, let's set the status of all Leslie buttons lights to OFF.

OVERDRIVE

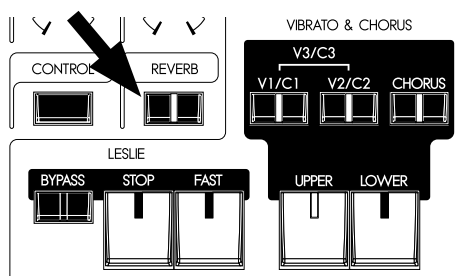


The overdrive section adds warmth at low settings, and “grit” or distortion at higher.

[AMOUNT] knob

Adjusts the amount of Overdrive. The amount increases as you rotate the knob clockwise. It is bypassed when you rotate the knob at minimum.

REVERB



The Reverb makes the concert-hall effect.

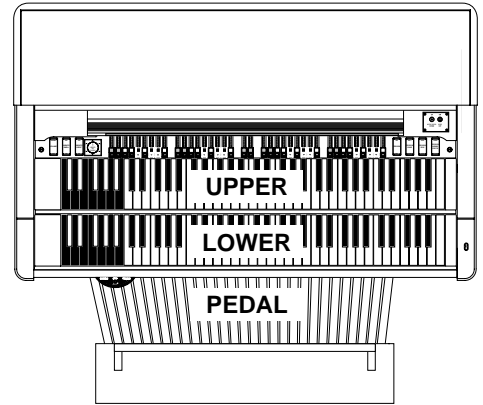
[ON] button

Turns the Reverb effect ON.

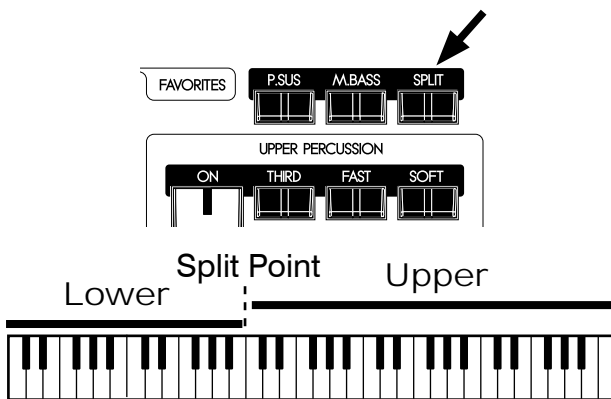
WHAT IS A "PART"?

Each "PART" is equivalent to a player in a band or an orchestra. The 3 Parts here are expressed in Organ terms: UPPER, LOWER, and PEDAL. These parts can be individually played with different sounds.

The XK-1C has a single keyboard. Plural parts are available simultaneously, by splitting the keyboards or expanding them using a MIDI keyboard.



KEYBOARD SPLIT



The XK-1C has only 1 manual, but it can be split and will respond as if it were a 2 manual instrument.

[SPLIT] button

To use the Split function, press the [SPLIT] button and the light will go ON. The default setting split is at the middle B/C.

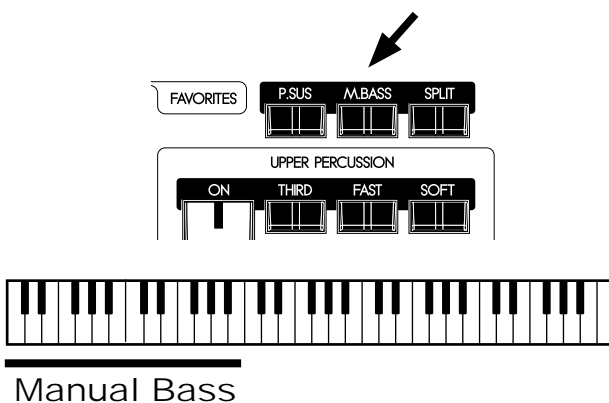
NOTE: You can change the split point (dividing note) and octave. (P. 106)

NOTE: The Split function is disabled when a second MIDI Keyboard is added. (P. 108)

Right of the split point is referred to as: UPPER and the left side LOWER. Percussion does not function on the LOWER part.

There is no SPLIT function available when the keyboard is extended.

MANUAL BASS



You can play the Pedal voices using the lowest notes of the keyboard (the LOWER keyboard if keyboard is extended) using MANUAL BASS.

[M. BASS] button

To use the Manual Bass function, press the [M. BASS] button and the light will go ON. The Pedal/Bass sound is heard in conjunction with the lowest note being played, on the manual keyboard till that time.

In order to not interfere with the melody performance, the default Manual Bass limit point is set to sound up to, and including middle "B".

NOTE: The Manual Bass can be set to play in Lowest, Polyphonic, and Chord modes (P. 106 #1). You can change the playing range of the Manual Bass (the upper limit) (P. 106 #2).

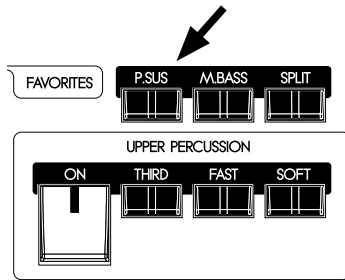
NOTE: When the XK-1C is expanded to 2 manual, the Manual Bass function appears on the LOWER keyboard. (P. 108)

The Manual Bass plays the PEDAL part and its sound is controlled by the [PEDAL] Drawbars. This is originated from the style of playing bass on the pedal keyboard of a 3 keyboard type organ.

You can use both the manual bass and the split at the same time. Making it possible to play the bass + chord + melody together.

NOTE: Jazz organists add a distinctive rhythm by "thumping" one or more pedals in time to their playing. You can simulate this technique without having a pedalboard by assigning a pedal note to a foot switch via a CONTROL parameter. See (P. 72).

PEDAL SUSTAIN



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

[PEDAL SUSTAIN]

To engage the pedal sustain, press the [P. SUS] button and the light will go ON. When you release your foot from the pedalboard (or release the key on the keyboard - when using manual bass), the PEDAL part decays smoothly.

NOTE: You can adjust the sustain time of the Pedal Sustain. (P. 69 #16)

RECORD THE PATCH TO MEMORY

All the previous settings can be recorded to any Patch within the range of U1-1 to U8-8.

Example: RECORD TO U3-2

1

Press the [RECORD] button.
A question “Which patch do you want to record?” appears in the display.

2

Select the patch number, this time U3-2, to record, using the [VALUE] knob.

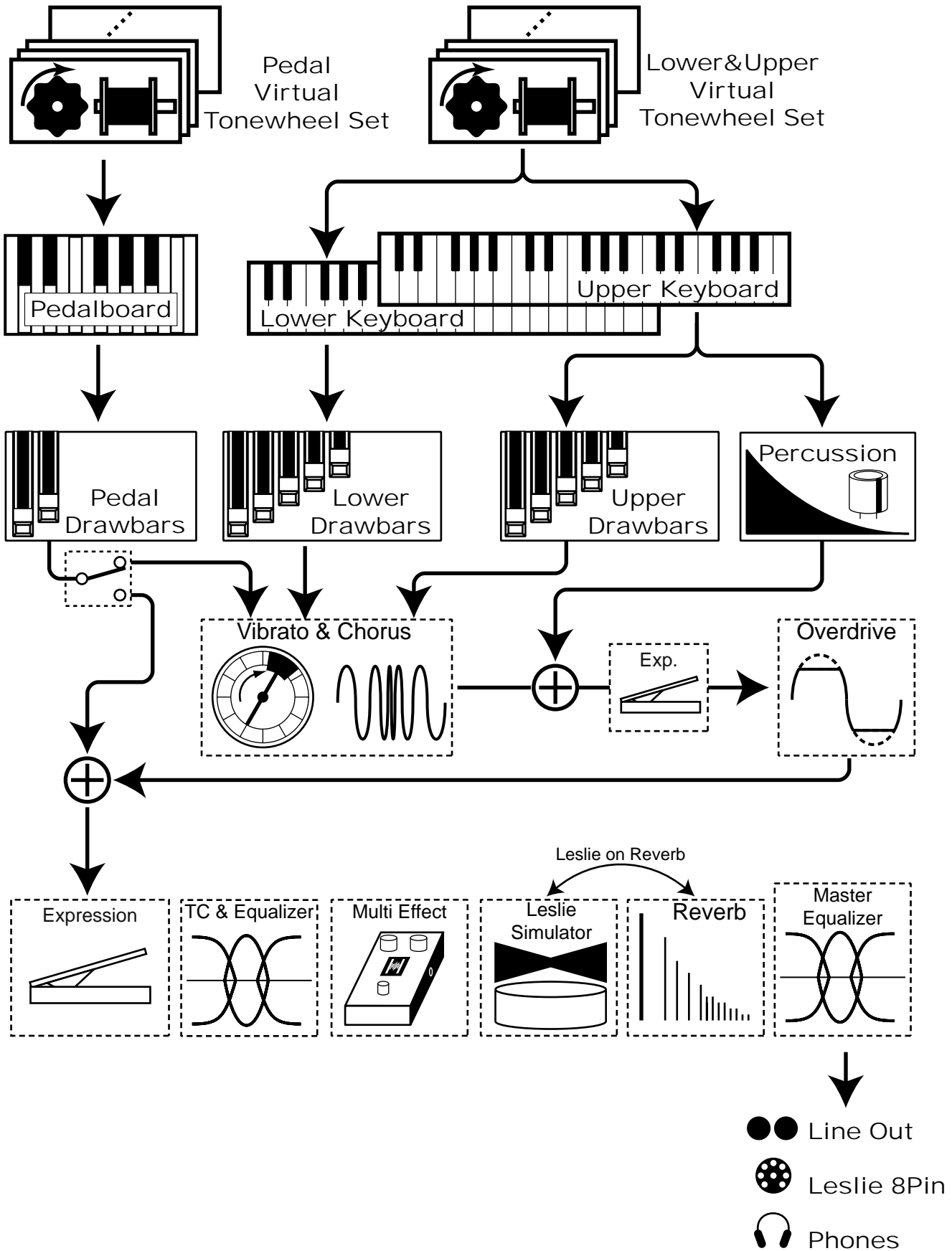
3

Press the [ENTER] button.
The Patch Number is decided and “Recording Patch” is displayed. When the recording process completes, the display returns to the previous mode.
The recorded patch is automatically selected.

NOTE: User created patch data is not lost when the power is turned off and/or disconnected.



SOUND ENGINE STRUCTURE



To fully utilizing this unit, read the following detailed explanations about the various functions for creating music.

ORGAN SECTION

TONE-WHEELS

The sound source or “engine” of the classic Hammond Organ are the electro-magnetic Tone-Wheel Generators. On this keyboard, the Tone Wheel engine is replicated digitally. While the power is on, each of the 96 virtual Tone-Wheels keeps oscillating as they did in the vintage Hammond Organs.

KEYS

The tone signals created with the 96 virtual Tone-Wheels are “switched” at the keys. To each key the signals corresponding to the pitch and harmonics (for example, 9 sets on the manual keyboard) are distributed, and when you touch or release a key, the switch connects or cuts the tone signals, in the same manner as a faucet controls water flow.

DRAWBARS

Each Drawbar represents a fundamental harmonic. Each bar adjusts the volume of each harmonic. There are 9 drawbars corresponding to 9 different harmonics.

TOUCH-RESPONSE PERCUSSION

The Percussion creates a distinctive attack on the UPPER part.

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).

OVERDRIVE

The Overdrive creates distortion as if an amplifier was being driven beyond its limits.

MULTI-EFFECTS

The Multi-Effects create various effects such as tremolo and 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.

(The on-board Leslie effect is disengaged when a external Leslie speaker is connected to the 8-pin terminal.)

MASTER EQUALIZER

The signal is routed through the Master Equalizer. Allowing you to tailor your sound for the provided venue, amp, sound system or recording. The settings are not saved in patch memory.

tips TONE-WHEEL SETS

The Tone-Wheel Sets are divided into the Manuals and the Pedal Part. This is to give the Pedal Part the Decay (= the sound gradually fading out while pressing the key) or Sustain Effect. (= the sound gradually fading out after the key is released).

tips HARMONICS

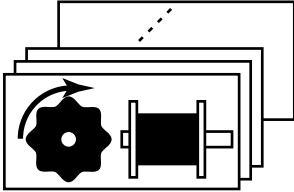
Harmonic is a pitch of a different ratio to a certain pitch; for example, the one octave higher C to the middle C. The more Harmonics, the brighter and richer sound is obtained.

ORGAN TYPE

There are various “Organ” types: the Hammond Tone-Wheel organs used in everywhere rock, jazz, and Gospel, the transistor organ frequently heard in pop music of ‘60’s. Classical pipe organ used in classical music or church services. All organs have characteristic sounds.

This keyboard will sound like the types of organ you choose.

STONE-WHEELS (BType1, BType2, Mellow)

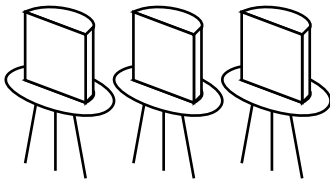


These are various types of Hammond Organs’ characteristic tone wheels. The Hammond Organ’s original purpose was to duplicate the pipe organ, however, they became famous for producing a unique sound of their own.

The BType1 and BType2 have the B-3/C-3’s traditional Tone-Wheel sounds. The BType2 has more wow-flutter and leakage noise.

The Mellow is not a Tone-Wheel, if strictly speaking. It replicates the first-generation non-mechanical Transistor Hammond Tone Generators like the GT-7 and Concord.

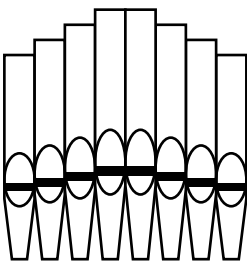
TRANSISTOR (Vx, Farf)



After the transistor became generally used, the light weight organs were introduced (such as Ace Tone TOP-6 etc.) using the transistor circuit instead of the tone wheels or tubes. The circuit system is different from maker to maker or model by model. We have replicated 2 representative types here.

The Vx is a type to combine the triangle wave and square wave with several footages. The Farf is one to combine the sound wave forms coming through plural filters with the tablet switch.

PIPE



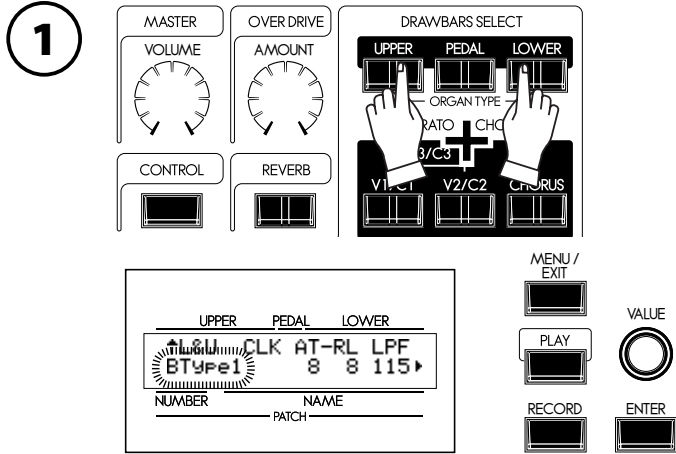
The Church/Classical Pipe Organ uses thousands of individual pipes driven by wind from a blower to create its sound. The name of the stops tells you which wind instrument is duplicated.

You can create other sounds by combining different organ Stops, in the same way Drawbars are used on this keyboard.

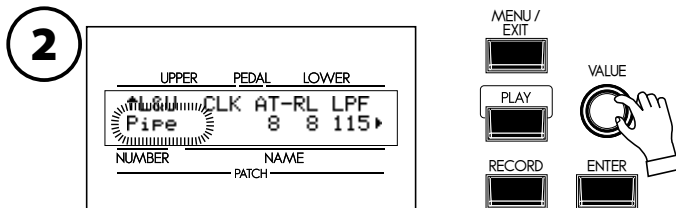
Column: SELECTING THE ORGAN TYPES

Use the control panel for switching the organ types.

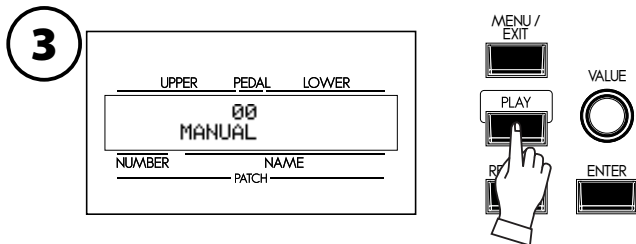
Example: Switching the manual part to “Pipe”



Press the [UPPER] and [LOWER] buttons together. The DRAWBAR function mode is displayed and the organ type (“BType1” etc.) of the manual keyboard presently selected blinks.



Select “Pipe” with the [VALUE] knob. The pipe organ sounds when you play the keyboard.



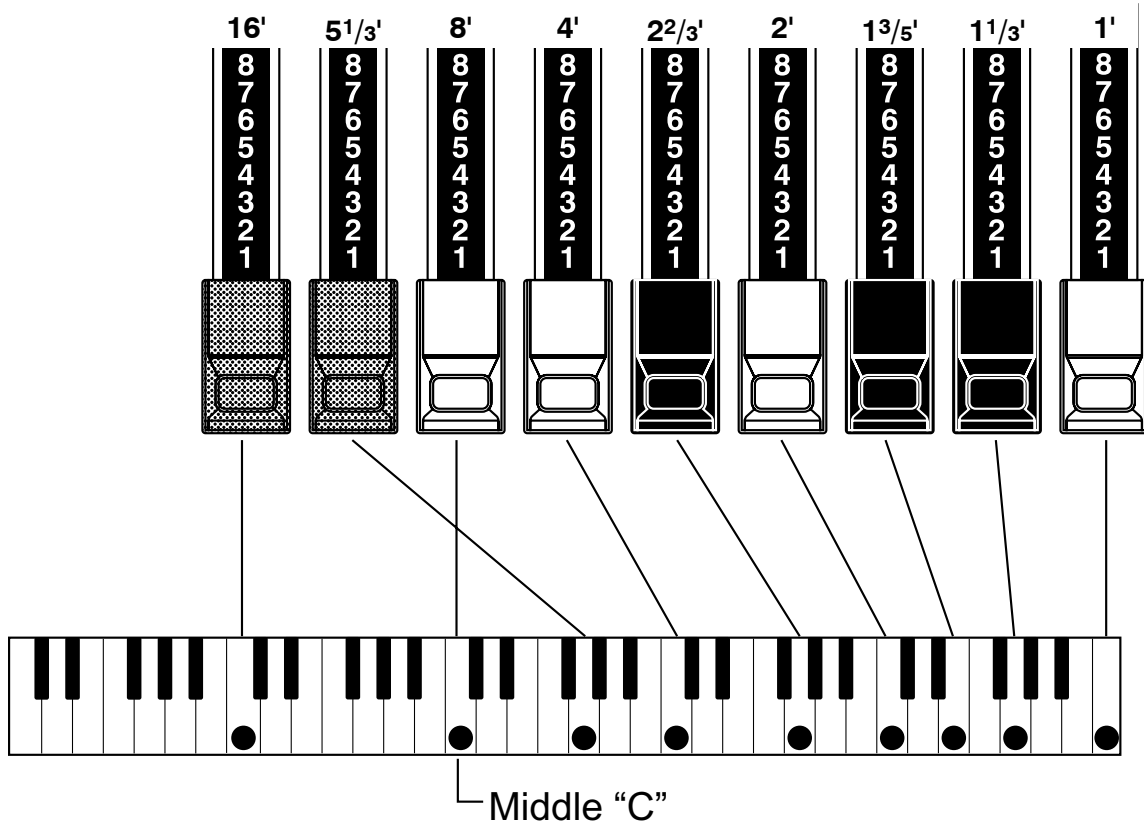
To return to the PLAY mode, press the [PLAY] button.

HARMONIC DRAWBARS™

The 9 Drawbars on this keyboard are used to create the basic “Hammond” sounds. Each Drawbar is marked with the register numbers 1 - 8 along the flat part of the Drawbar. When the Drawbars are fully pushed in, no sound is heard; as the Drawbars are “pulled” the volume of that harmonic increases.

When recalling a patch, the drawbars’ “positions” will change internally, but not physically. When a drawbar is moved, the setting will “snap” to that drawbar’s current position.

DRAWBARS (ON TONE-WHEEL ORGAN)



The pitch of each Drawbar is as shown above, when the middle C is depressed. The footage marked (') legend in front of each Drawbar is derived from the corresponding length of pipes of a pipe organ.

tips DRAWBAR RESISTRATION

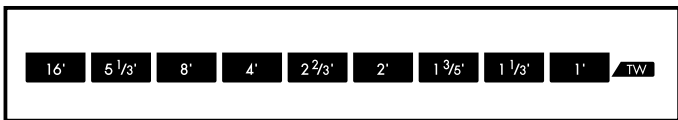
The lengths of the pulled out Drawbars.

The numbers 1 - 8 on the “bar” portion of each Drawbar indicate the volume of the sound to be produced as well as the guide to remember Drawbar settings.

Pull the fundamental (8'), the third harmonic (2 2/3') plus the fifth harmonic (1 3/5') Drawbars out completely and play the keyboard. Notice how the sound resembles a clarinet.

If you push the 8' Drawbar half-way, you'll notice the sound becomes more high-pitched and a bit “harder”. Now pull the 8' Drawbar back out fully and push the 2 2/3' and 1 3/5' in halfway. Notice how the sound becomes mellower.

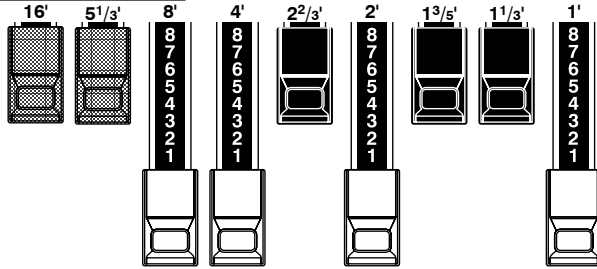
Experiment with the Drawbars to obtain your own personal favorite sounds.



In the case of the Tone-Wheel Organ, refer the correspondence between each bar and the footage to the “TW” row in front of the Drawbars.

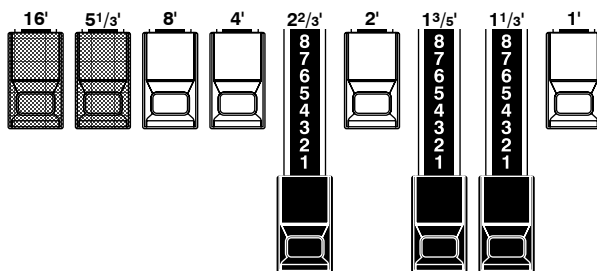
DRAWBARS FOR THE UPPER AND LOWER PARTS

WHITE DRAWBARS



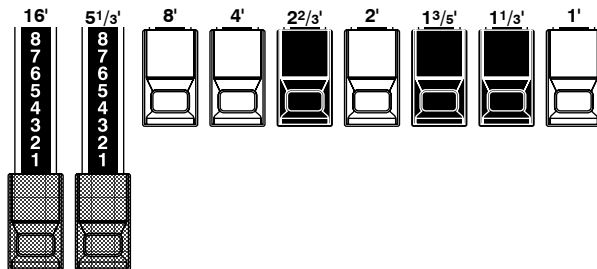
In each Drawbar set, the white Drawbar on the left side (8') provides the fundamental sound. The remaining white Drawbars sound higher by the octave as you move to the right.

BLACK DRAWBARS



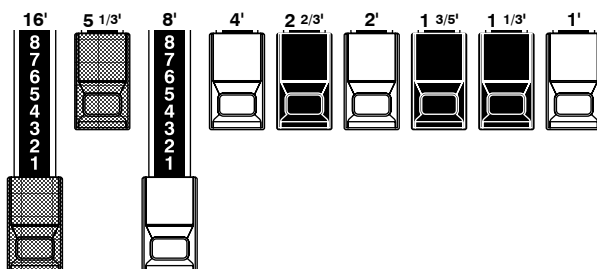
The sounds of the black Drawbars play an important role in building rich tones. Their pitches are fifth and third to the fundamental. These harmonics add complexity to the tone.

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 5 1/3' 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.

DRAWBARS TO USE ON THE PEDAL



The Pedalboard plays the bass line and uses the 16' and 8' Drawbars. The first Pedal Drawbar produces a tone at 16' pitch for a deep foundation bass, while the second Pedal Drawbar produces a tone at 8' pitch, or one octave higher.

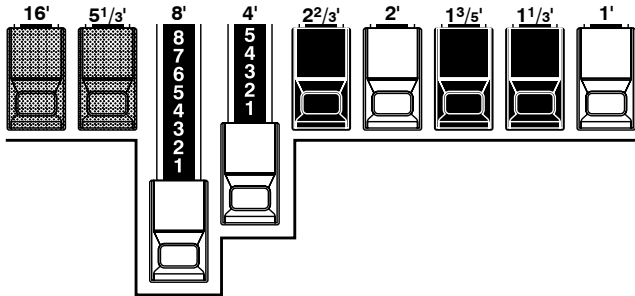
The registration of the Pedal part appears in the center of the display. 16' on the left and 8' on the right.

DRAWBAR REGISTRATION PATTERNS

The Drawbar Registration is matched by digits. It is easy to remember the typical combinations of the 9 Drawbars by their forms.

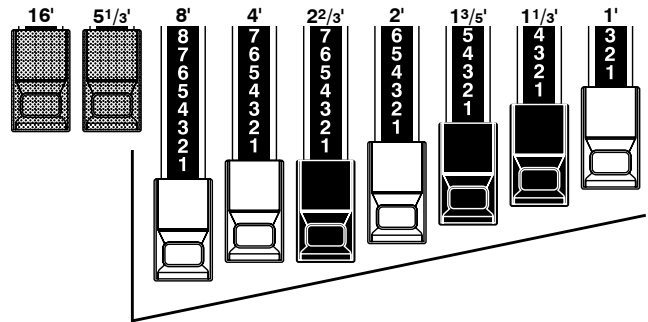
The Drawbar Registrations are grouped into the following 4 patterns:

Flute family (2 step pattern)



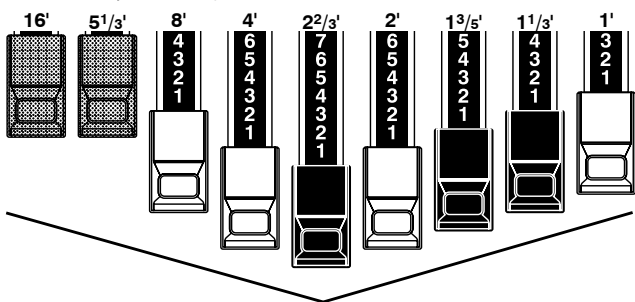
Accompaniment Flute 8' I.....	00 8460 000
Accompaniment Flute 8' II.....	00 3220 000
Accompaniment Flute 8' III.....	00 8600 000
Chorus of Flutes 16'.....	80 8605 002
Orchestral Flute 8'.....	00 3831 000
Piccolo 2'.....	00 0006 003
Stopped Flute 8'.....	00 5020 000
Tibia 8'.....	00 7030 000
Tibia 4'.....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

Diapason family (check mark pattern)



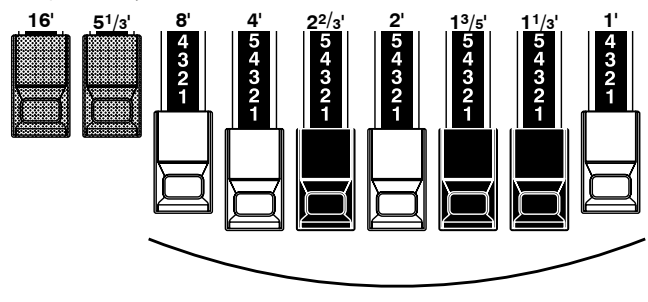
Accomp. Diapason 8'.....	00 8874 210
Chorus Diapason 8'.....	00 8686 310
Diapason 8'.....	00 7785 321
Echo Diapason 8'.....	00 4434 210
Harmonic Diapason 16'.....	85 8524 100
Harmonic Diapason 8'.....	00 8877 760
Harmonic Diapason 4'.....	00 0606 045
Horn Diapason 8'.....	00 8887 480
Open Diapason 8'.....	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)



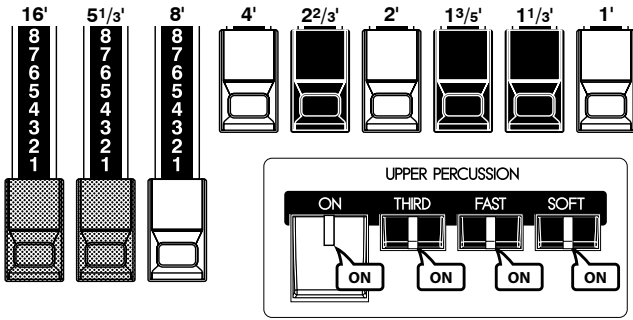
Cello 8'.....	00 3564 534
Dulciana 8'.....	00 7770 000
Gamba 8' I.....	00 3484 443
Gemshorn 8'.....	00 4741 321
Orchestral String 8'.....	00 1464 321
Salicional 8'.....	00 2453 321
Solo Viola 8'.....	00 2474 341
Solo Violin 8'.....	00 3654 324
Viola da Gamba 8'.....	00 2465 432
Violina 4'.....	00 0103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

MODERN DRAWBAR REGISTRATIONS

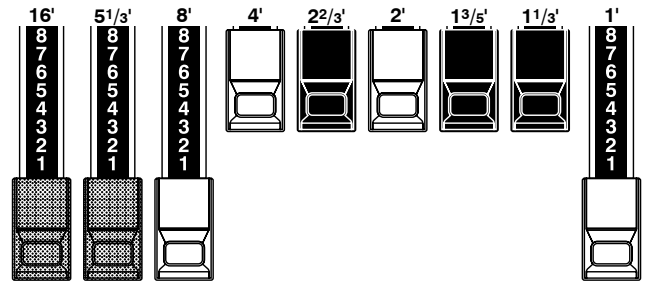
The Drawbar registrations introduced on the previous page are typically for classical music.

They were created at the dawn of the Hammond Organ, when it was intended to sound like a pipe or church organ. Later on, as the Hammond Organ spread throughout Jazz, Pop, Rock and (especially) Gospel music, Some timeless registrations become common.

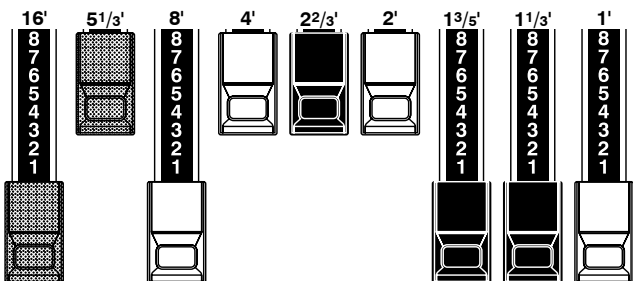
Jazz



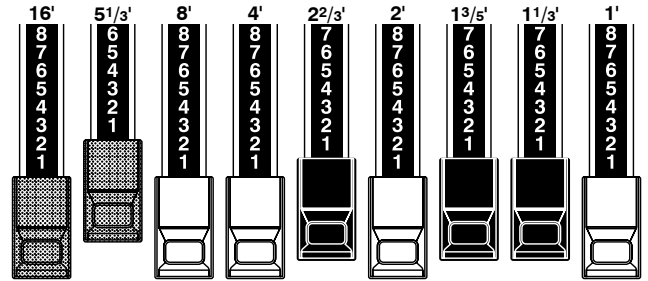
Bluesy



Groovy & Funky



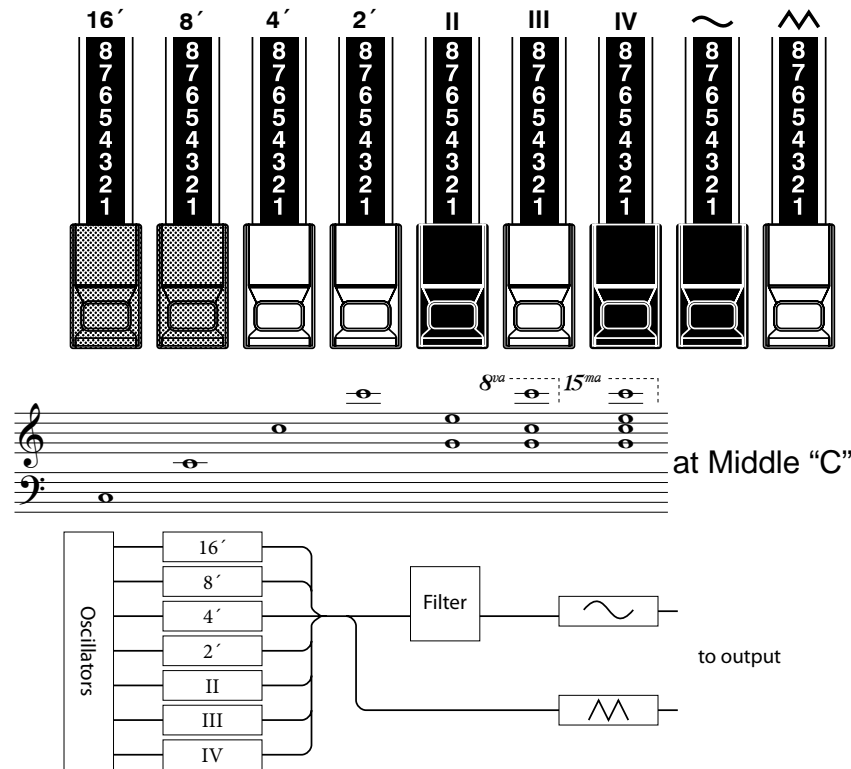
Max Power



tips APPLICATION OF PERCUSSION

When Percussion is used, the sound of the 1' Drawbar is cancelled. As it was on the Vintage B-3. A trick is to keep the 1' drawbar fully out, and then turn the percussion on and off as you play for a instant change in sound. Try it!

DRAWBARS (Vx)



The original British Vx type organ was equipped with Drawbars, but the function was different from that of the Hammond Organ. The vintage arrangement has been re-created here.

Each of the 4 bars on the left functions similarly to the Hammond Organ. II, III and IV on the right are “Mixture” drawbars that sound plural pitches.

The 2 Drawbars on the right are a mini mixer controlling the mellow voice “~” or bright voice “^” as in the vintage combo organ.

Each or both of the two right-hand Drawbars must be pulled in some combination to hear sound in the Vx type.

tips FOOTAGE

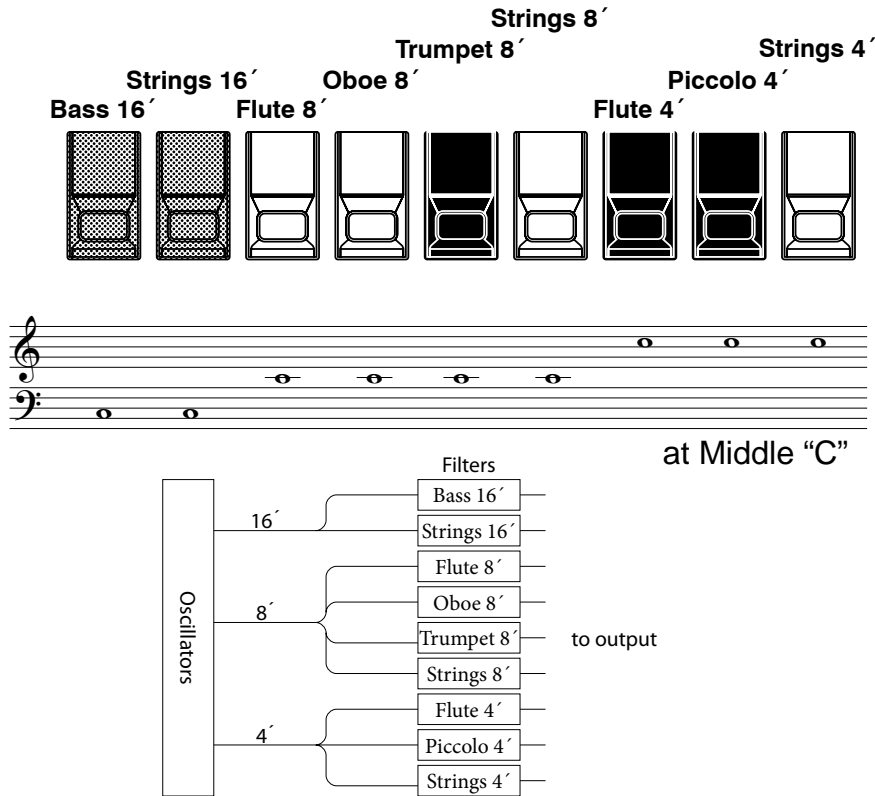
The markings, “8’; 4” etc., indicate the lengths of pipes corresponding to their pitch. The common term for these numbers are “footages”.

For example, 8’ means that a pipe of 8’ in length sounds, the lowest C on a standard 5 octave organ keyboard.

Bass 16'	Strings 16'	Flute 8'	Oboe 8'	Trumpet 8'	Strings 8'	Flute 4'	Piccolo 4'	Strings 4'	/Fari
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

If the organ type is set to Vx, refer to the “Vx” row on the other side of the Drawbars for the correspondence between each bar and the footage.

DRAWBARS (Farf)



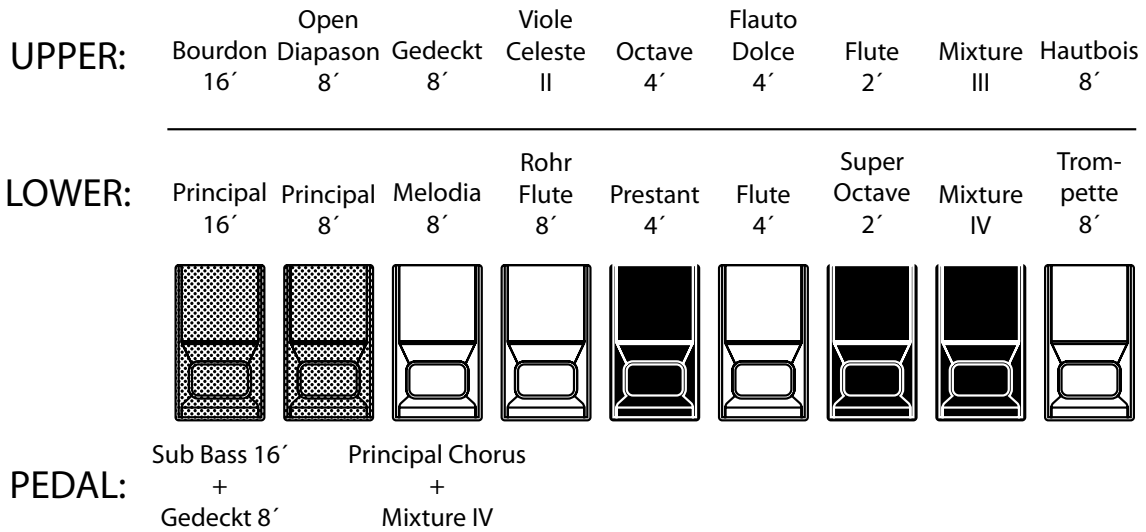
The original Italian Farf type organ was tablet-equipped with different sounds at various footages. On this keyboard the operation is made with Drawbars instead of tablets.

At the same footage, the tablets gives grow brighter in sound as you progress to the right. The names "Flute", "Strings", etc. are general descriptions and do not reflect the tonalities or characteristics of the real instruments.

Bass 16'	Strings 16'	Flute 8'	Oboe 8'	Trumpet 8'	Strings 8'	Flute 4'	Piccob 4'	Strings 4'	Farf.
16'	8'	4'	2'	II	III	IV	~	^^	Vx.
Bourdon	OpenDiap	Gedeckt	VoixCist	Octave	Flauto	Flute	Mixture	Hautbois	Pipe
16'	8'	8'	II	4'	4'	2'	III	8'	

When using the Farf type organ, refer to the "Farf" row on the other side of the Drawbars for the correspondence between each bar and the footage.

DRAWBARS (PIPE)



When using the PIPE organ type, the stops are registered through the Drawbars, and follow the classic organ layout left to right as follows: Flue, Mixture and Reed.

On the UPPER and LOWER parts, each Drawbar corresponds with a stop of the pipe organ.

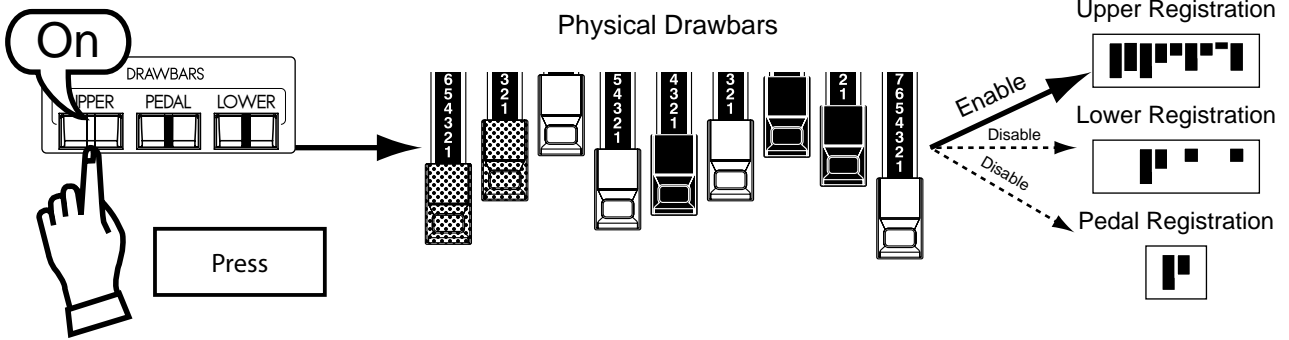
On the PEDAL part, two stops sound with one Drawbar.

NOTE: The effects - Vibrato & Chorus, Leslie, Overdrive - are not available on the Pipe type voices.

Bass 16'	Strings 16'	Flute 8'	Oboe 8'	Trumpet 8'	Strings 8'	Flute 4'	Piccolo 4'	Strings 4'	/Fart.
16'	8'	4'	2'	II	III	IV	~	^	/Vx.
Bourdon 16'	Open Diap. 8'	Gedeckt 8'	Voix Clst II	Octave 4'	Flauto 4'	Flute 2'	Mixture III	Hautbois 8'	/Pipe

If the organ type is Pipe, refer to the "Pipe" row on the other side of the Drawbars for the correspondence between each bar and the stop.

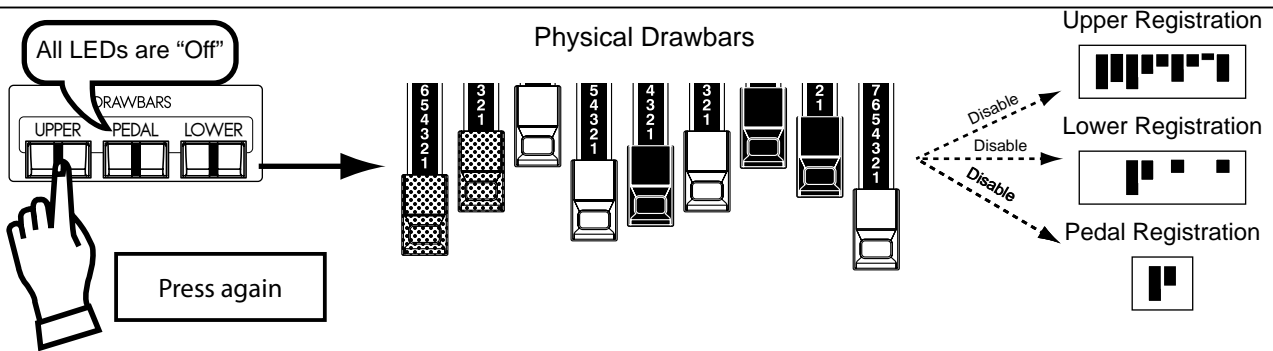
ASSIGN DRAWBARS TO PARTS



This keyboard has 3 parts; UPPER, LOWER and PEDAL. The UPPER part is normally used, and, when you want to sound the LOWER, PEDAL, use the Split / Manual Bass Function or connect a MIDI keyboard and/or Pedalboard and assign each part.

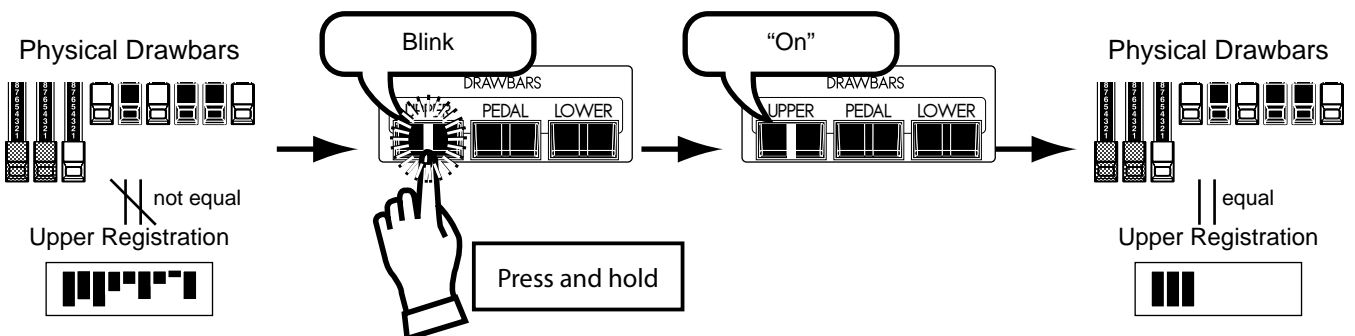
The Drawbars select buttons are [UPPER], [PEDAL] and [LOWER]. The button you choose, sends the registration commands to proper part of the sound engine.

One set of drawbars is used to register all three parts individually, using the Drawbar select buttons.



If you de-select a drawbar button, the instant control of the Drawbars for that part is suspended. You can “pre-set” a registration, however (covered in next section).

MATCH THE REGISTRATION TO DRAWBARS



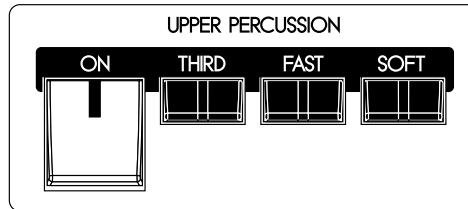
When you recall a patch, the Drawbar registration of the recorded patch is heard, instead of the physical Drawbar setting. If you move any Drawbar, its position takes precedence over the recorded registration, although the recorded preset is not altered.

and hold the corresponding button ([UPPER], [PEDAL] or [LOWER]) in the Drawbar select until the light blinks then release it. The physical registration now becomes “current”.

If you wish to switch to the physical Drawbar setting, Press

PERCUSSION

One of the most important features introduced with the Classic B-3 was “Touch-Response” Percussion, which added a distinctive and bright percussive highlight to the top of the Drawbar tone.



[ON] button

Switches the percussion “ON” and “OFF”.

To engage, press the [ON] button. (light on).

[THIRD] button

Switch the harmonic of the percussion.

When this button is OFF, the 2nd harmonic speaks at the same pitch as the 4' Drawbar (Analogous to the “Second” setting on a B-3).

The 3rd harmonic tone speaks at the same pitch as the 2 2/3' Drawbar (Analogous to the “Third” setting on a B-3). To select, press the [THIRD] button (light on).

[FAST] button

When this button is OFF (LED not lit) the percussion tone will decay (decrease in volume) slowly like a bell. When it is “ON” (LED is lit) the percussion tone will decay rapidly like a xylophone.

[SOFT] button

This reduces the volume of the Percussion.

When the LED is OFF, it is “NORMAL”. If you press the [SOFT] button (LED is lit on), the Percussion level is “SOFT”.

NOTE: Percussion is available on 3 Organ types; BType1, BType2 and Mellow.

NOTE: You can fine-tune the parameters of the Percussion (P. 76).

tips DECAY

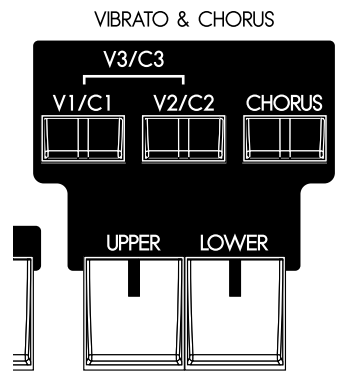
On the piano, the sound gradually fades out even if you keep touching the key. It is called Decay. The violin sound, on the contrary, keeps sounding at a certain volume. It is called Sustain.

1' DRAWBAR CANCEL

As on the Vintage Hammond B-3, the 1' Tone-Wheel Drawbar is inoperative when the Percussion is engaged.

NOTE: If you wish the 1' Drawbar to remain operative, you can change the parameter. (P. 76)

The Hammond Vibrato & Chorus is another hallmark of the Classic Hammond sound. Vibrato alters the pitch slightly, as a violinist, singer, or guitarist might do. Chorus combines a slightly detuned signal with the original for a lush tone.



[UPPER] button

Pressing [UPPER] button “ON” (LED lit) will turn the Vibrato & Chorus effect on for the UPPER Drawbars.

[LOWER] button

Pressing [UPPER] button “ON” (LED lit) will turn the Vibrato & Chorus effect on for the LOWER Drawbars.

[V1/C1], [V2/C2] button

These buttons are for setting the depth of the Vibrato & Chorus effects.

- V1 (C1):** V1 (C1), light vibrato (chorus)
- V2 (C2):** V2 (C2), vibrato (chorus) of standard depth.
- V1+V2 (C1+C2):** V3 (C3), deepest vibrato (chorus)

NOTE: While the power is on, the Vibrato and/or Chorus button LED’s will always be on. The effect will not be active unless the UPPER or LOWER switches are pressed (LED on).

[CHORUS] button

The CHORUS effect combines a slightly detuned signal with the original. Press this button to switch the Vibrato to Chorus (LED lit).

NOTE: Vibrato & Chorus is available on 5 Organ types; BType1, BType2, Mellow, Vx and Farf.

NOTE: The speed etc. of the Vibrato & Chorus effects can be fine-tuned. (P. 77)

NOTE: The Vibrato & Chorus effects on this keyboard come from a virtual model of the mechanical scanner as first used on the vintage B-3. It operates in the same manner, albeit in the digital realm. (no moving parts)

tips

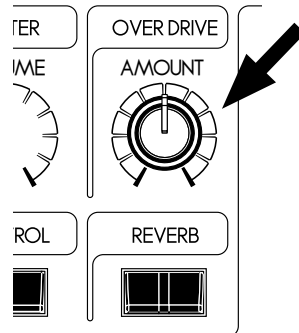
STATUS CHART OF EACH BUTTON

BUTTON			MODE
V1/C1	V2/C2	CHORUS	Effect
On	Off	Off	V1
Off	On	Off	V2
On	On	Off	V3
On	Off	On	C1
Off	On	On	C2
On	On	On	C3

OVERDRIVE

Overdrive simulates the effect of pushing an amplifier beyond its normal limits to achieve a more aggressive sound.

By changing the drive amount, various sounds are obtained from an unclipped warmth to a hard distortion.



[OVERDRIVE AMOUNT] knob

Adjusts the amount of the Overdrive effect.

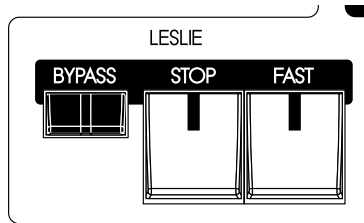
Rotating the knob at the end of counter-clockwise, the effect is "Off".

Rotating the knob clockwise increases the depth of the effect.

NOTE: Drawbar Overdrive is available on 5 Organ types; BType1, BType2, Mellow, Vx and Farf.

NOTE: You can fine-tune the overdrive sound. (P. 86)

The rotating sound of the LESLIE Speaker is the natural partner of the Hammond Organ. A Digital version is built-in to the XK-1C; and the controls will also function with a connected external Leslie speaker.



[FAST] button

Toggles the mode of the rotor by two steps. Every press switches the status. When the light is ON, the mode is FAST, and when it is OFF, it is not.

[STOP] button

To toggle the FAST and SLOW when you pressed the [FAST] button, press this button and the light OFF.

To toggle the FAST and STOP when you pressed the [FAST] button, press this button and the light ON.

[BYPASS] button

When the light is OFF, the sound is output from the rotary channel (Leslie effect).

To bypass the Leslie effect, press this button and the light will go ON. Regardless of the status of the [FAST], [STOP] buttons, the sound is output from the stationary channel.

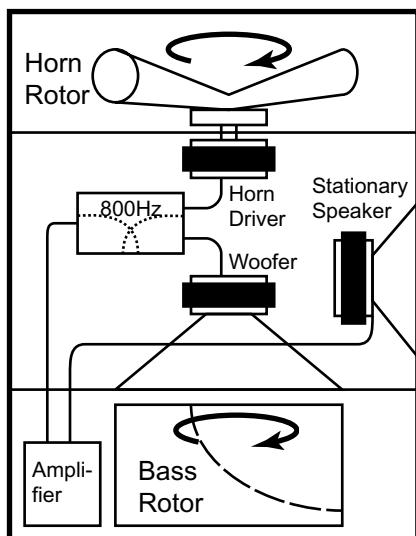
NOTE: Leslie Effect is available except Pipe type.

NOTE: You can fine-tune the parameters of the Leslie effect. (P. 78)

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 3 channel Leslie Speaker



tips WHAT IS THE LESLIE EFFECT?

The Leslie Speaker was invented by Donald Leslie in 1941 to make the Hammond Organ sound like a Theatre Pipe Organ. Using motor-driven rotating horns and baffles, Leslie's invention gave the organ a rich and moving tone, which quickly became it's own unforgettable sound.

In its basic form, the Leslie Speaker has an built-in amplifier and two rotors; the "Horn Rotor" for treble and the "Bass Rotor" for bass which are each fed by a custom-designed driver/speaker. The combination of the two utilizes the "Doppler Effect" to give the unique Leslie "swirling" sound.

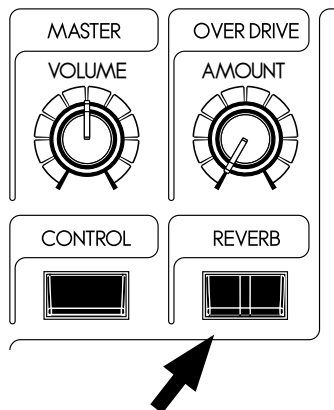
Some models have not only rotors but also a fixed speaker. The circuit for sending the sound to the rotor is called the "Rotary Channel", and that for the fixed speaker is called the "Stationary Channel".

The Digital Leslie on-board the XK-1C employs all the proprietary concepts used in the physical speakers, but realizes them in the digital realm. It is recommended that you run the Main Outputs "in stereo" to get the fullest effect.

REVERB, MULTI-EFFECTS

The XK-1C has on-board Digital Reverb and Multi-Effects to enhance the performance.

◆ REVERB



[REVERB ON] button

To engage the Reverb, press this button and the light will go ON.

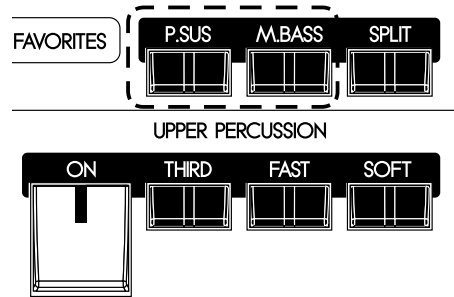
NOTE: You can fine-tune the depth, time etc. of the Reverb. (P.95)

◆ MULTI-EFFECTS

The XK-1C has various multi-effects such as Tremolo, Wah-Wah and so on. See the "OD/EFF" paragraph (P. 86) for detail.

The PEDAL part may be played on the low part of the keyboard using the MANUAL BASS function.

A popular option for playing the Pedals or Manual Bass is Pedal Sustain, which allows the Pedal voice to smoothly decay upon release, much in the manner of a string bass.



[M. BASS] button

To engage the Manual Bass function, press the [M. BASS] button (light ON).

If you have the keyboard SPLIT, the Manual Bass will sound in tandem with the chosen LOWER registration.

If you have a MIDI keyboard attached as the LOWER keyboard, the MANUAL BASS will appear there, on the lowest notes.

The default range of the MANUAL BASS is up to the middle “B”.

NOTE: You can change the highest note range of the MANUAL BASS (P. 106 #2).

NOTE: You can select the MANUAL BASS play chords or only the lowest note (P. 106 #1).

[P. SUS] button

To engage the PEDAL SUSTAIN, press the [P. SUS] button (light ON).

After releasing a key on Pedal keyboard (if attached) or, releasing a Manual key while using the Manual Bass function, the sound will slowly fade, or decay.

NOTE: You can control the decay time of the Pedal Sustain (P. 69 #16).

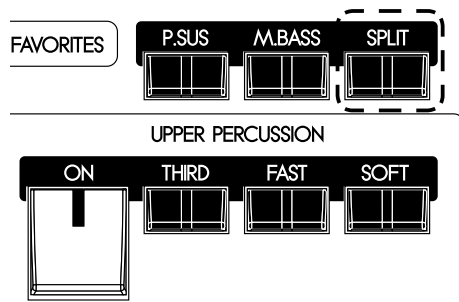
tips COUPLER

Like the Manual Bass, the function to set a keyboard to play two keyboards together is called “COUPLER”.

KEYBOARD SPLIT, OCTAVE SHIFT, TRANSPOSE

The XK-1C normal range is the UPPER Keyboard. A split is optional to place the LOWER keyboard voices on the left side of the single keyboard.

The keyboard can be shifted up or down one octave to facilitate easier play.



[SPLIT] button

Press to split the keyboard, (light ON).

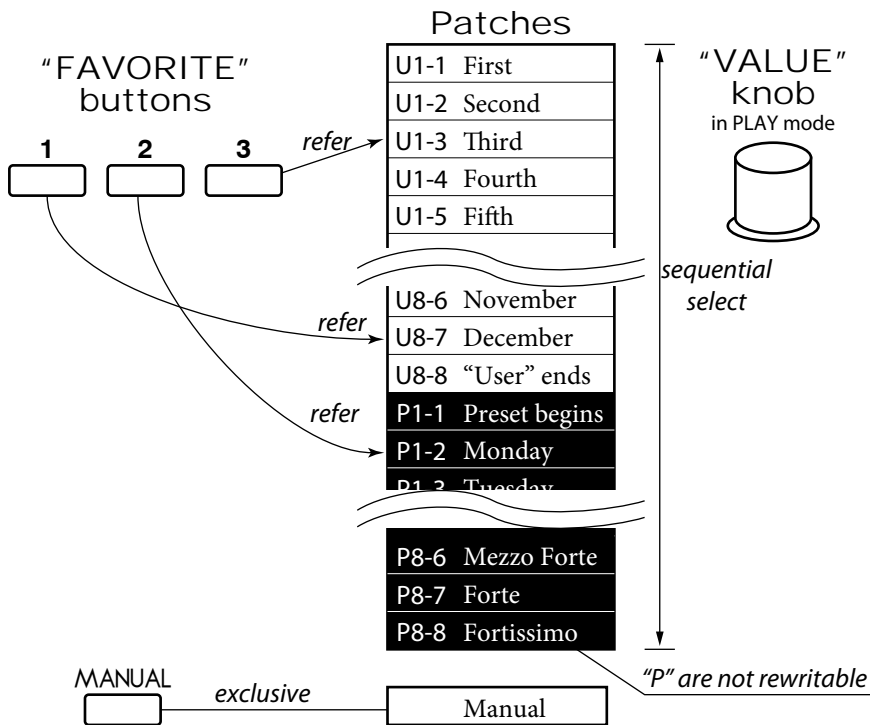
NOTE: You can set the split point. (P. 106)

To raise or lower the octave of the keyboard, see the “ZONES” paragraph (P. 106).

To transpose the keyboard, see the “TUNE” paragraph (P. 71).

The settings (including registrations) you have prepared can be recorded to User Patches.

USER AND PRESET



There are 64 USER and 64 PRESET Patches as illustrated. The "User" Patches are overwrite capable. The "Preset" Patches are not. To call the Patch, select the Patch Number with the [VALUE] knob in the Play mode (P. 23).

To record the present setting to the patch, first give a name to it and designate the patch number before recording the patch (next page).

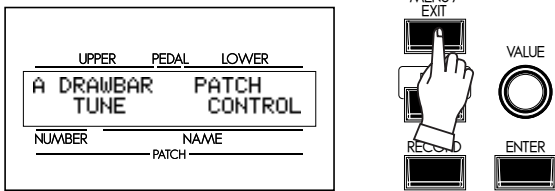
The [MANUAL] button on the right bottom of the favorites shifts the focus to the current settings of the top panel, and the current internal settings. It is used as a starting point for writing your own patches, or for the musician who prefers to register "by hand" instead of using patches.

tips PATCH LOAD

Only the Drawbar registrations of each keyboard were recorded to the preset of the B-3/C-3. But many more parameters than the Drawbar registrations are recorded to the patches on this keyboard. If you wish to keep the "traditional" style of registration (Drawbars only), Select the proper parameters in "Patch Load". (P. 70)

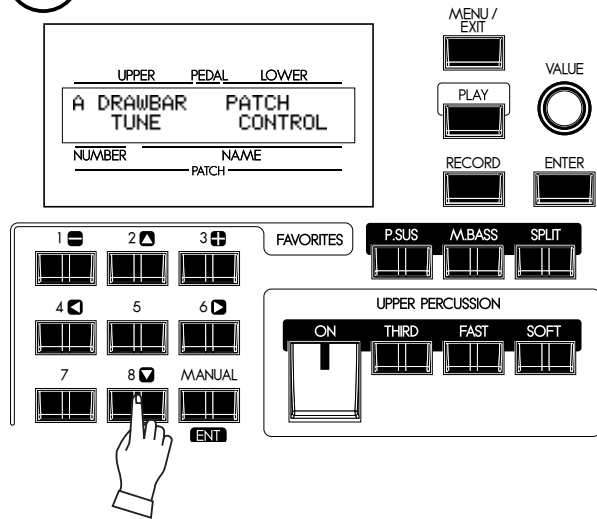
NAME THE PRESENT SETTING

1 GO TO THE MENU MODE



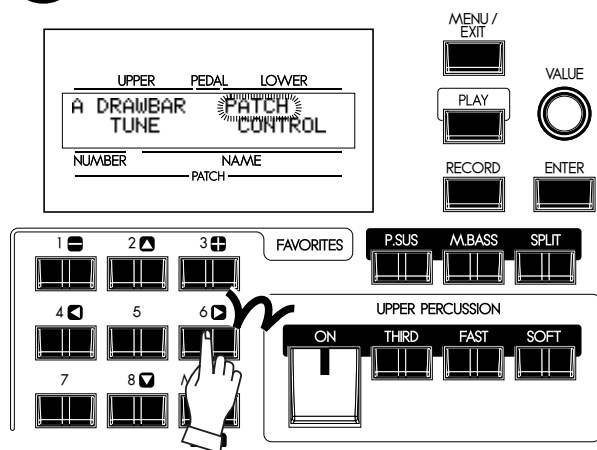
Press the [MENU/EXIT] button.
Menu mode will be displayed.

2 GO TO PAGE A



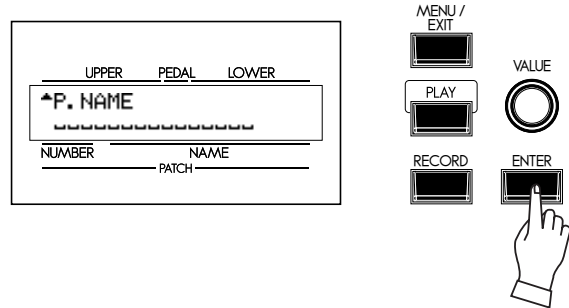
If Page A is not displayed, go to Page A by pressing [▼] button.

3 SELECT THE "PATCH"



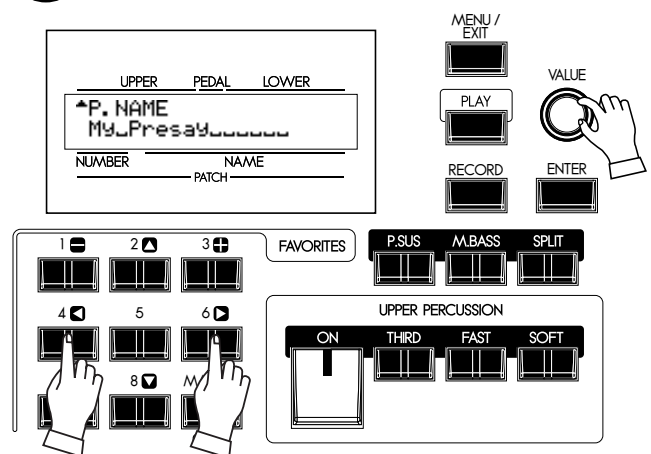
Press [▶] button twice and move the cursor to "PATCH".

4 GO TO PATCH FUNCTION MODE



Press [ENTER] and go to PATCH function mode.

5 INPUT NAME



You can enter a name using up to 15 letters.

- [◀],[▶] buttons: Moves the cursor.
- [VALUE] knob: Selects letters.

The Characters available are the Capital and small English Alphabet, symbols and digits.

The name input here is not captured until you record the patch (as explained on the next page).

RECORD TO THE PATCH

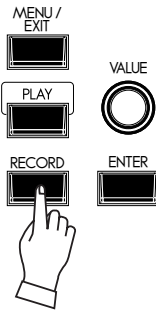
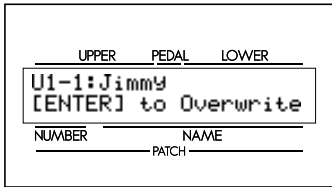
Example: RECORD TO "U3-2"

1 GIVE THE NAME



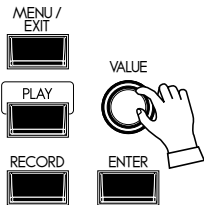
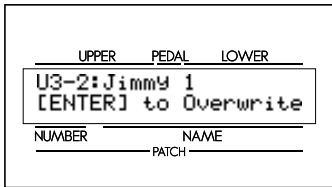
Enter the name of your Patch. (P. 54)

2 PRESS THE [RECORD] BUTTON



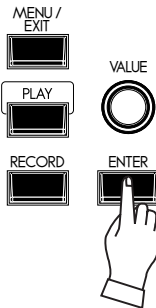
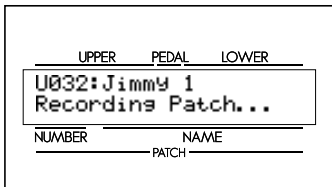
Press the [RECORD] button. The Record mode is displayed.

3 SELECT THE PATCH NUMBER



Select the patch number you wish to record with the [VALUE] knob (This time select U3-2).

4 PRESS [ENTER]



Press the [ENTER] button. The patch is confirmed and is displayed as follows for a few seconds:

Recording Patch...

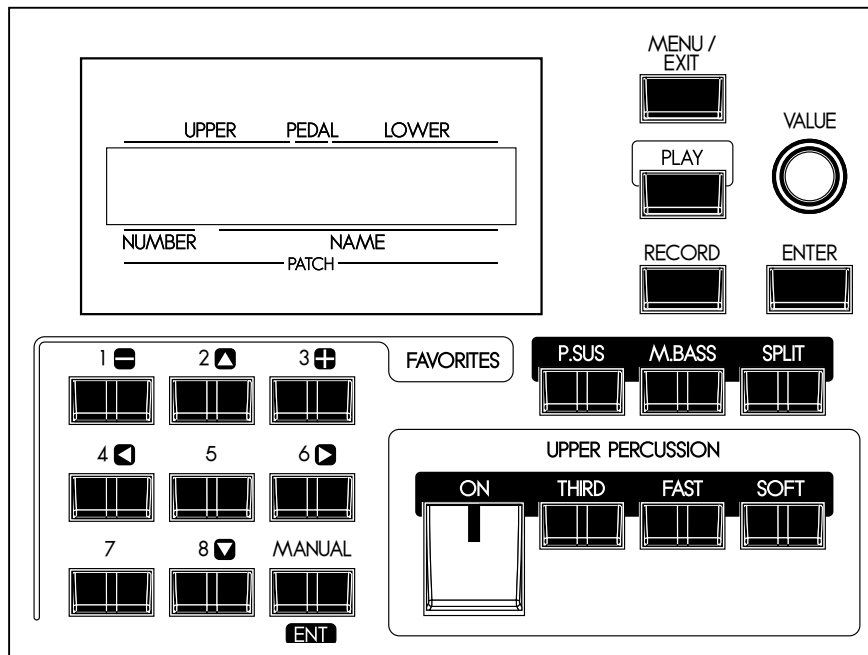
When the recording is completed, the display returns to the previous one.

NOTE: The recorded patch data is retained if the power is switched off or disconnected.



WHAT YOU CAN DO ON THE CONTROL PANEL

Your access to deep-editing the XK-1C. All of the parameters and all of the controls not covered by the top panel knobs and switches are here.



The available modes are, basically “PLAY”, “MENU” and “FUNCTION”. See how to read them and how to use the buttons on the next pages.

PLAY mode

```

███-█ █ 88 ███-█ █
U6-4 Born To Be W
  
```

MENU mode

```

A DRAWBAR PATCH
TUNE CONTROL
  
```

FUNCTION mode

```

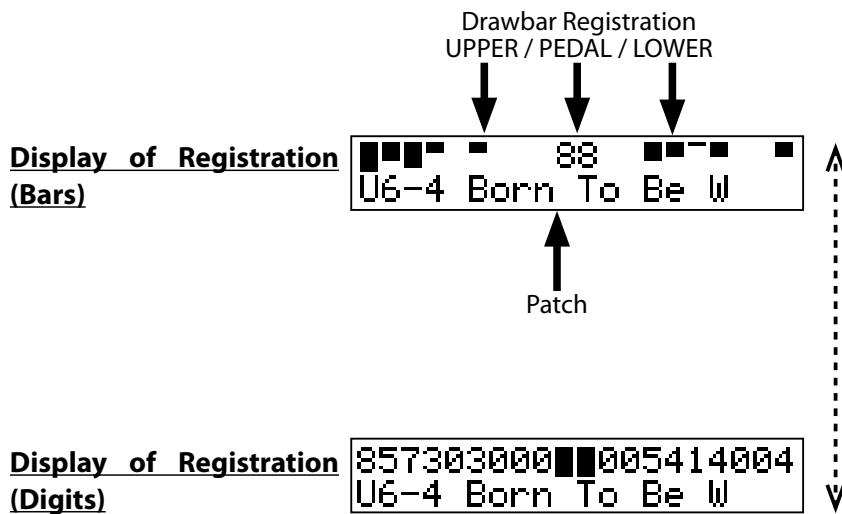
⚡BASS SLOW FAST LEV
SPD 36 393 0▶
  
```

The Play mode is basic for all operations. All information necessary for ordinary performance is displayed here.

To locate this mode

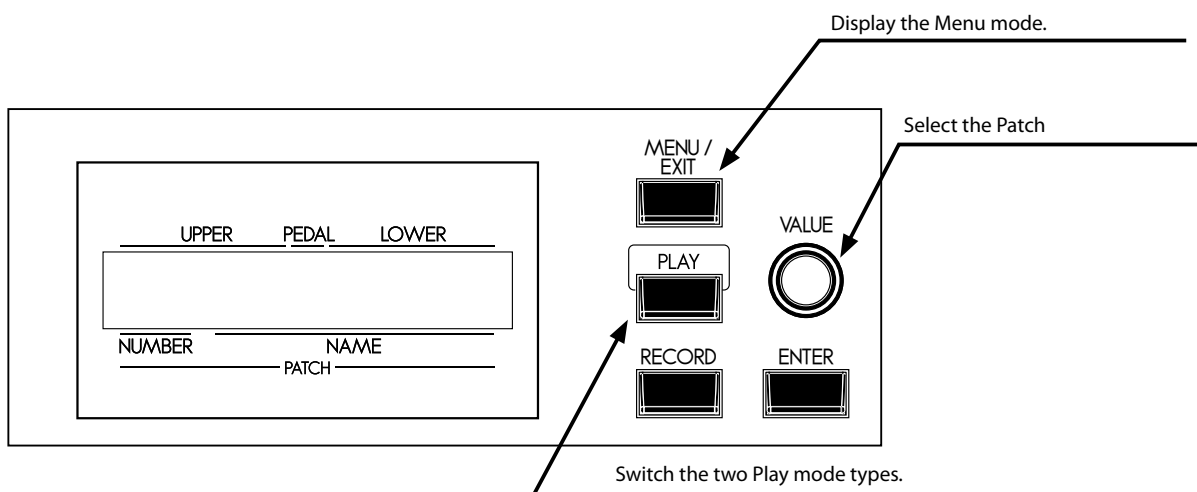
1. "Play mode" is the default mode at power-up.
2. If the Play mode is not displayed, touch the [PLAY] button.

HOW TO READ THE DISPLAY



The two PLAY modes, for displaying the Registration are toggled every time the [PLAY] button pressed.

BUTTON OPERATION IN THIS MODE



MENU MODE

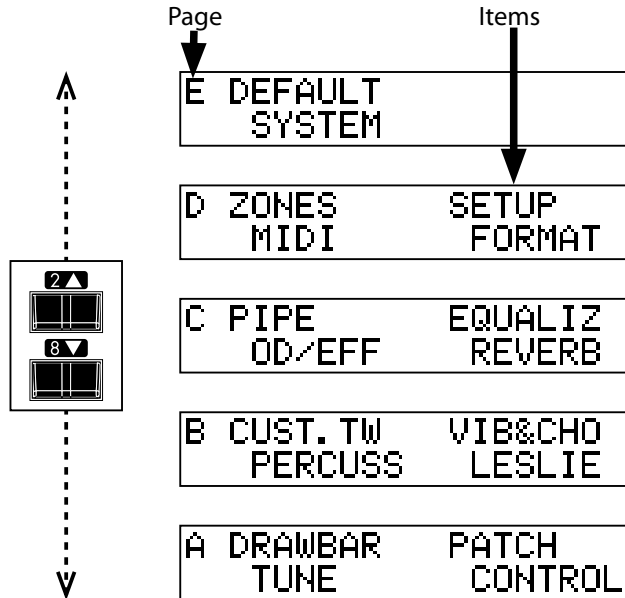
The menu mode provides a directory of all the various functions.

To locate this mode:

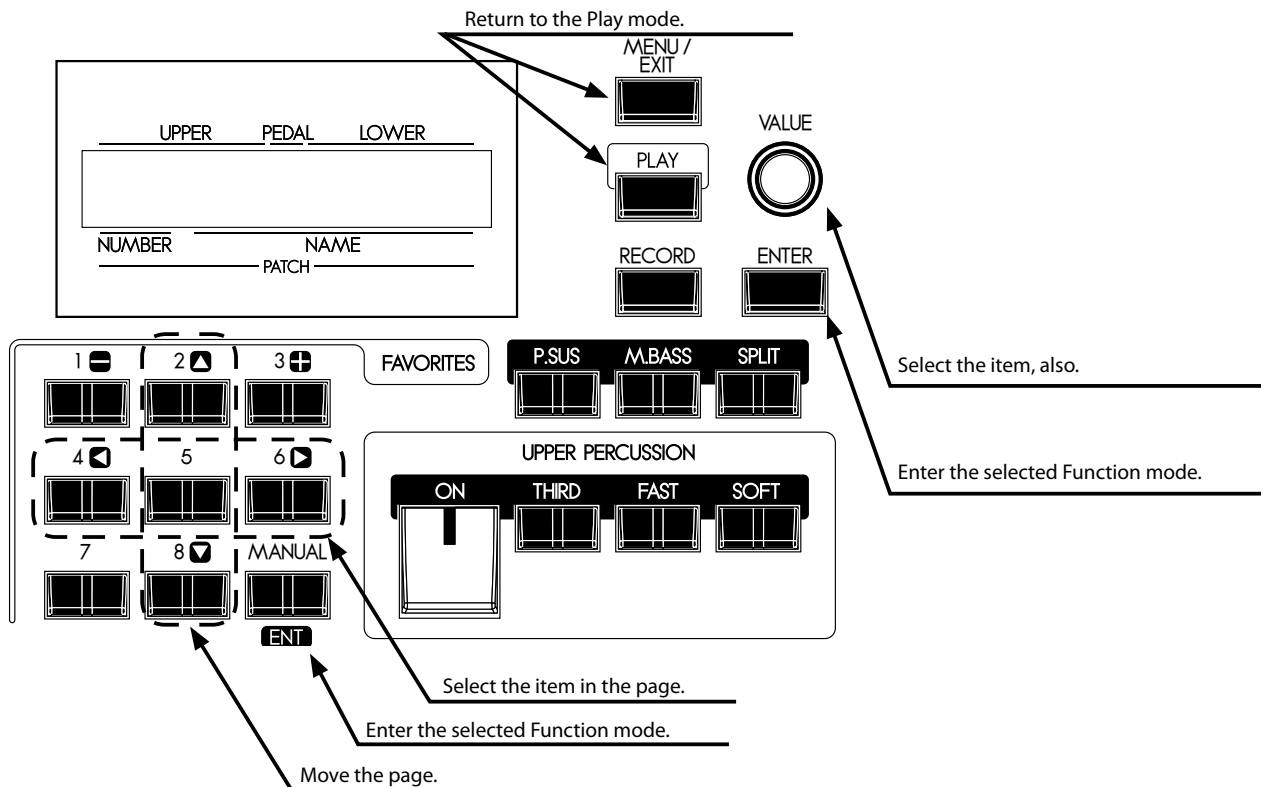
Press the [MENU/EXIT] button.

There are many pages functions available to edit. A menu page has up to four items. Search for the item you wish to edit using the direction buttons, then press the [ENTER] button and enter each Function mode.

HOW TO READ THE DISPLAY



BUTTON OPERATION IN THIS MODE



MENU AND THE CONTENTS

PAGE A

1. DRAWBAR

Sets the parameters for the Drawbars of each part. (P. 68)

2. TUNE

Set the tuning and transpose of the entire keyboard. (P. 71)

3. PATCH

Patch naming, Parameter Load and Assignment of Favorites. (P. 70)

4. CONTROL

For adjusting the controllers, such as the Expression Pedal and Foot Switch. (P. 72)

PAGE B

1. CUST.TW

For custom setting of the tone wheel sets of the Lower and Upper part. (P. 72)

2. PERCUSS

For custom setting the percussion parameters. (P. 76)

3. VIB & CHO

For custom setting the characteristics of the Vibrato & Chorus. (P. 77)

4. LESLIE

For adjusting the on-board Leslie effect and sets the external Leslie speaker settings. (P. 78)

PAGE C

1. PIPE

Adjust the characteristics of the Pipe stops here. (P. 84)

2. O. D./EFF

Adjust the Overdrive and the Multi-Effects here. (P. 86)

3. EQUALIZ

For setting the parameters of the Patch and Master Equalizer. (P. 94)

4. REVERB

For setting the Reverb parameters. (P. 95)

PAGE D

1. ZONE

For setting the Internal Zone and External Zones. (P. 106)

2. MIDI

For setting the basic MIDI operations. (P. 108)

3. SETUP

For saving/loading the set-up to/from a USB Flash drive. (P. 112)

4. FORMAT

For initializing the USB Flash drive. (P. 113)

PAGE E

1. DEFAULT

For returning to the various factory default settings. (P. 96)

2. SYSTEM

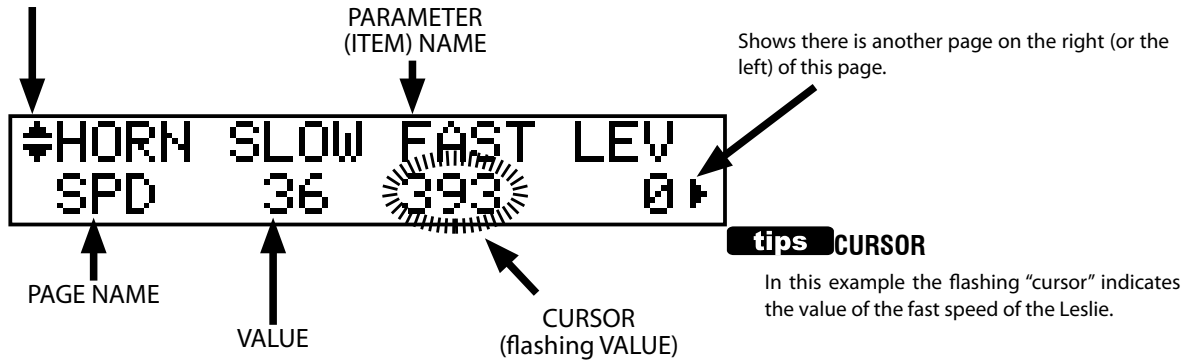
For setting the System Parameters and displaying the System information. (P. 97)

FUNCTION MODE

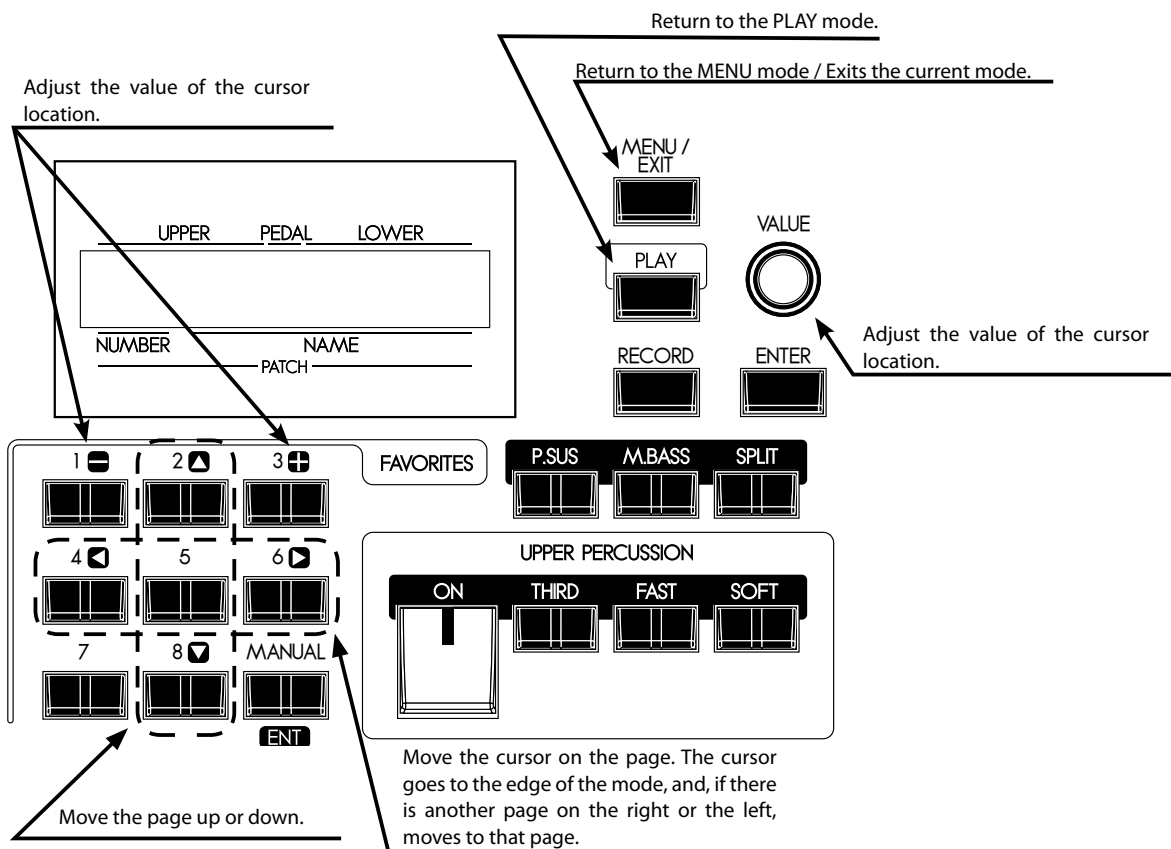
These modes are for selecting and controlling the function.
All modes can be navigated the same way.

HOW TO READ THE DISPLAY

There is another page above (or below) this page.



BUTTON OPERATION IN THIS MODE

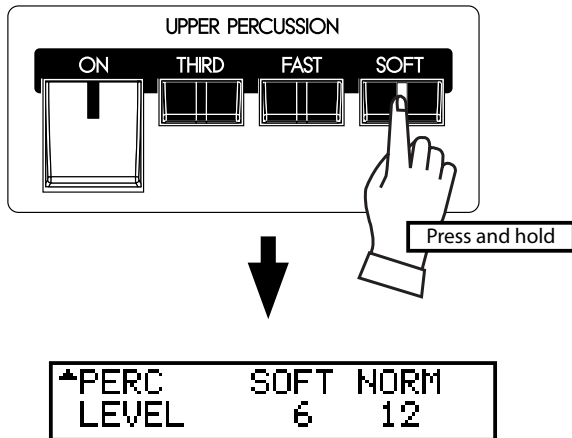


Each button on the top panel has a built in shortcut-making programming and editing easier.

Pressing and holding any of the buttons on the top panel automatically jumps the display to the related function menu item.

EXAMPLE OF OPERATION:

LOCATE THE PERCUSSION FUNCTION MODE



If you wish to edit the percussion settings, press and hold either of the [ON], [THIRD], [FAST], or [SOFT] buttons, and the display will immediately jump to the percussion function mode. This is called “SHORT CUT”.

In the next chapter, you will see which button is used for a particular “SHORT CUT”.

NOTE: Changing the length of time until display jump when button is held. (P. 74)

REGISTER THE PAGES YOU FREQUENTLY USE

You can assign frequently-used function page to the [CONTROL] button for immediate access.

EXAMPLE OF OPERATION:

REGISTER THE “DRAWBAR - PEDAL” PAGE

1

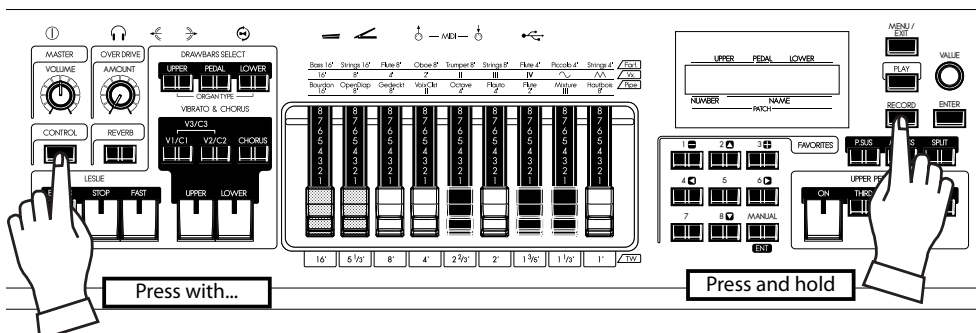


Display the page you want to register using the MENU etc. Here, as an example, let's display the “Drawbar - Pedal” page.

2

While holding down the [RECORD] button press the [CONTROL] button.

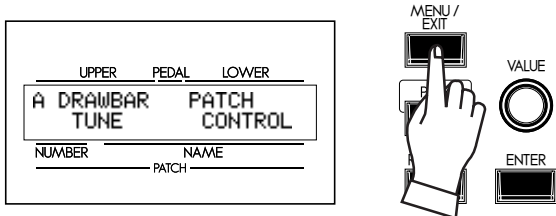
You will be able to immediately access the desired page by pressing the [CONTROL] button.



PARAMETER OPERATION EXAMPLE:

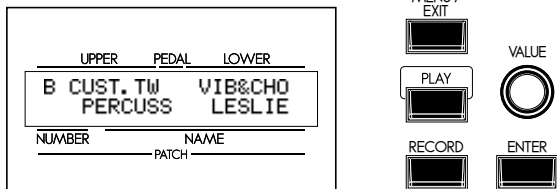
ADJUST THE [FAST] PERCUSSION DECAY TIME

1 LOCATE THE MENU MODE



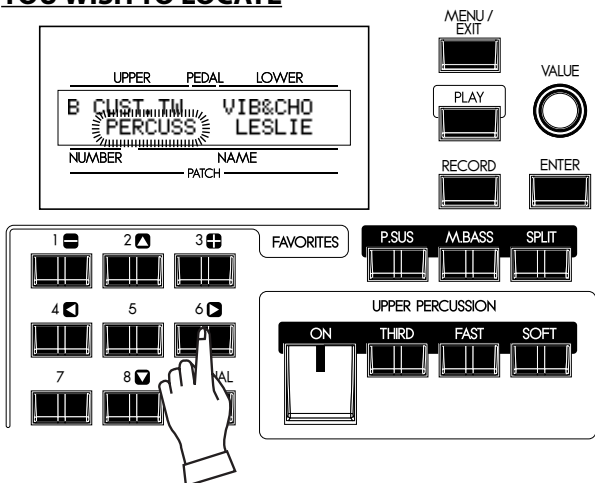
Press the [MENU/EXIT] button.
The MENU mode is displayed.

2 SELECT THE MENU PAGE



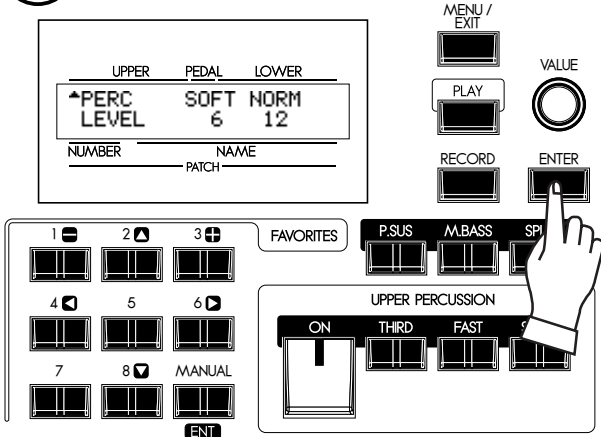
Locate the "PERCUSS" page using the [▲],[▼] buttons.
"PERCUSS" is on Page B.

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



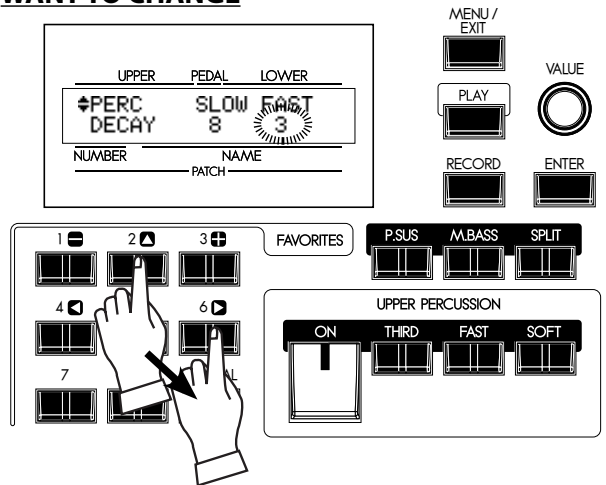
Move the cursor to "PERCUSS" using the [◀],[▶] buttons.

4 PRESS [ENTER]



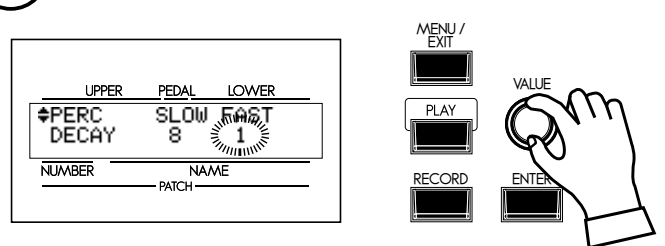
Press the [ENTER] button. The display shows the first page of the Percussion function mode.

5 MOVE THE CURSOR TO THE PARAMETER YOU WANT TO CHANGE



Decay time is on the "DECAY" page. Locate the "DECAY" page using the [▲],[▼] buttons.
"FAST" is on the right side of the page. Move the cursor (blinking value) to the right using the [▶] button.

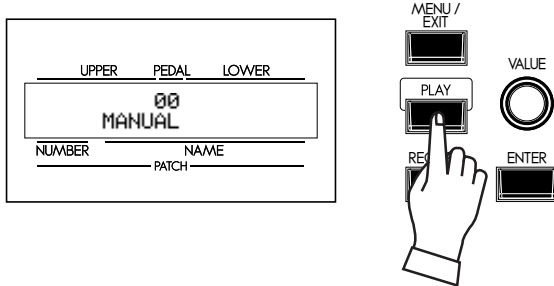
6 CHANGE THE VALUE



Decrease the value using the [VALUE] knob.

NOTE: If you want to change other items, repeat the process 1 to 6.

7 RETURN TO THE PLAY MODE

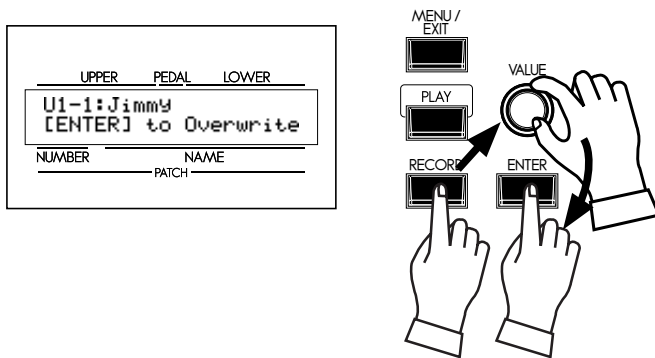


Press the [PLAY] button. The display returns to the PLAY mode.

8 RECORD TO THE PATCH IF DESIRED

The parameter “DECAY FAST” is a patch parameter, so, when you call a patch, it is changed to the newly set value.

If you desire the change to be made permanent for the patch, record it as previously indicated.



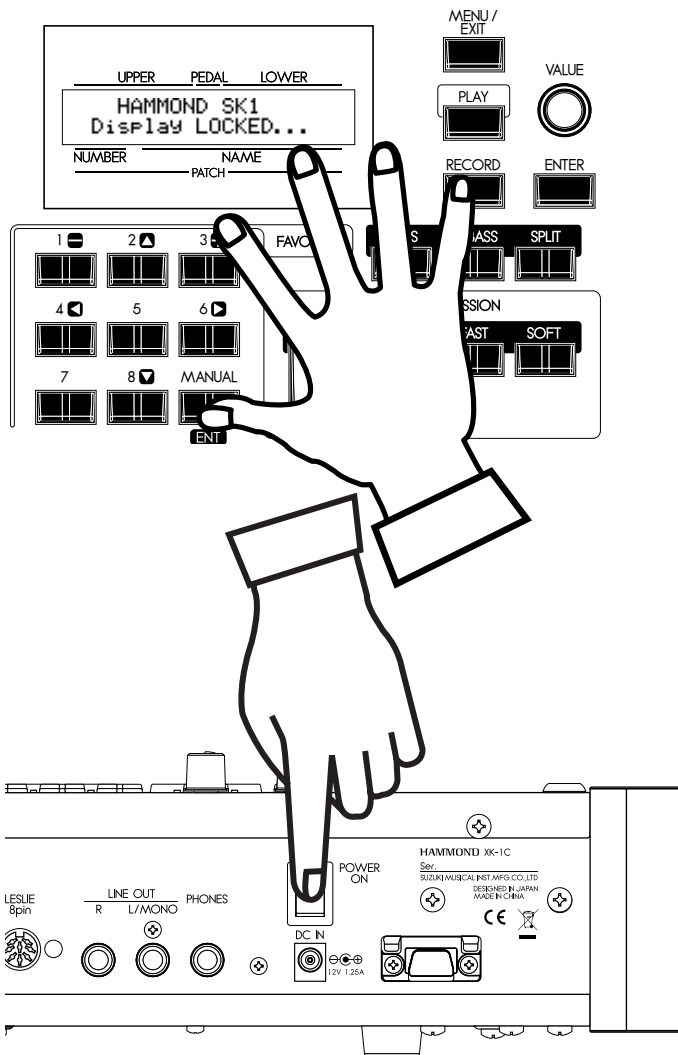
tips PATCH PARAMETERS

Patch Parameters are unique to the current patch, and change with the programming of each patch. Many of the knobs/buttons on the top panel are “Patch Parameters”

The Parameters common to all the patches are called “Global Parameter”.

LOCKING THE DISPLAY

You can lock the display to avoid mistake while playing.



To lock the display, switch [POWER] on with pressing [RECORD] and [MANUAL] until "Display LOCKED" is displayed.

To unlock this, repeat the operation above until "Display UNLOCKED" is displayed.

This function works listed below;

- ◆ [MENU/EXIT] button (P. 60) is disabled.
- ◆ [RECORD] button (P. 55) is disabled normally. But you can record the patch by using "LOCKED 1-10" (P. 25), or you can associate the favorite buttons by using "ASSOCIATE" (P. 70) before locking the display.
- ◆ "Short-Cut" function (P. 63) is disabled.
- ◆ [DRAWBAR SELECT] buttons (P. 45) are still enabled.

NOTE: This feature will not released by Default-All or power on while holding [RECORD] button.

tips USING REGISTERED PAGE

The [CONTROL] button can register a page in function mode. Even if the display is locked, you can enter the registered page by using [CONTROL] button (P. 63).

However, you cannot move the cursor if the page has 2 or more parameters.





**SETTING THE
PARAMETERS**

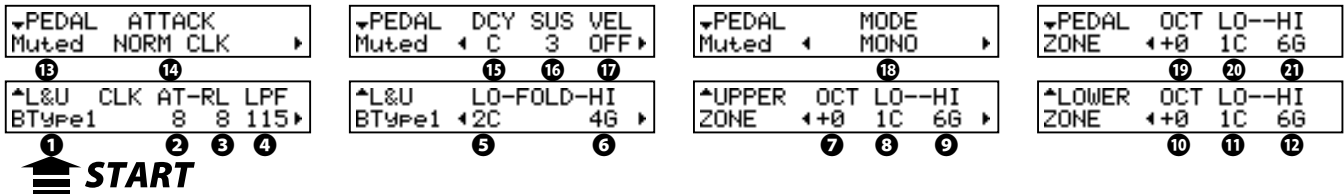
DRAWBAR

Drawbar sound parameters for each keyboard are set in this mode.

To locate this mode:



See the "Function mode" (P. 62) for operational details.



◆ SETTING FOR MANUAL (LOWER & UPPER) DRAWBARS

❶ ORGAN TYPES

Select the manual keyboard organ type.

- BType1:** Traditional B-3/C-3 tone-wheel sound
- BType2:** Sound with more leakage noise and wow-flutter
- Mellow:** With transparent sine waves
- Vx:** Transistor Organ, Vx type
- Farf:** Transistor Organ, Farf type
- Pipe:** Pipe Organ

When the organ type is set at Vx, Farf, or Pipe, the parameters (2) to (6) are unavailable.

❷ CLICK - ATTACK LEVEL

Sets the key-on click volume.

The higher the value, the louder the click gets. No key-click at 4. As the value goes lower than 4, the attack rate becomes slower.

❸ CLICK - RELEASE LEVEL

Sets the key-off click volume.

The higher the value, the louder the click gets. No key-click at 4. As the value goes lower than 4, the release rate becomes slower.

❹ CLICK - LOW PASS FILTER

Sets the key-click tone.

The setting range is 0 to 127. The higher the value, the brighter the sound.

❺ FOLDBACK - LOW

Sets the key-point from which the 16' Drawbar folds back (= repeat the same octave on the lower octaves of the keyboard).

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

❻ FOLDBACK - HIGH

Sets the key from which the 1' Drawbar folds back (= repeat the same octave on the higher octaves).

The setting range is 4G to 5C.

NOTE: The Fold-back is possible not only with 1' but also with 1½', 1¾', 2', 2¾' Drawbars.

❼ UPPER ZONE OCTAVE

Set the octave shift for the UPPER part. The setting range is -2 to +2.

❽ UPPER ZONE LOW

❾ UPPER ZONE HIGH

Set the sounding range of the UPPER part with these two parameters.

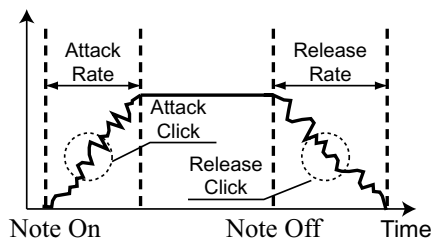
tips TONE-WHEEL SET

There are variations available for each virtual Tone-Wheel set of BType1, BType2 and Mellow. (P. 81)

tips KEY CLICK

On the traditional models such as B-3/C-3, a noise occurred when keys were pressed and released, due to the mechanical keying system employed on the classic organs. That characteristic is replicated here.

Loudness



tips

EXAMPLES OF KEY-CLICK SETTINGS

Simulation of classic multi-contact keyboard B-3 and C-3: AT = 8, RL = 8

Simulation of a PCM synthesizer to produce the key-click only at 'attack': AT = 8, RL = 4

Slow envelope like a pipe-organ: AT = 0, RL = 0

tips FOLD-BACK

As the number of the Tone-Wheels was limited on the B-3/C-3, the very highest and lowest pitches "folded back" on the keyboards, sounding the same octave twice in a row. This function reproduces this characteristic.

10 LOWER ZONE - OCTAVE

Set the octave shift for the LOWER part. The setting range is -2 to +2.

11 LOWER ZONE - LOW**12 LOWER ZONE - HIGH**

Set the sounding range of the LOWER part with these two parameters.

See page 102 for details of #7 to 12.

◆ SETTING THE PEDAL PART**13 ORGAN TYPE**

Set the Organ type for the Pedal part.

Normal: The traditional tone wheel sound of the B-3/C-3.

Muted: Analog oscillating sound as heard on the Classic X-5.

Synth1: Saw-tooth waveform with the filter-sweep.

Synth2: Dull square wave.

When the "Pipe" Organ type is selected by (1), only Pipe Organ pedal sounds are heard, regardless of this parameter. Also, parameters (14) to (17) are unavailable.

14 ATTACK

This allows you to set the Pedal Attack Rate and the Key-Click Volume at 'attack' and 'release'.

MAX CLK: Immediate attack and the key-click is loud.

NORM CLK: Immediate attack and the key-click is normal.

SOFT CLK: Immediate attack and the key-click is soft.

NO CLK: A slightly slower attack without key-click.

SLOW ATK: Slow attack without key-click.

15 DECAY RATE

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

The setting range is 1 - 5 and C. The higher the value, the longer the decay time. There is no decay at C.

16 SUSTAIN LENGTH

This allows you to set the Release Rate (= the decay time after key release), when the [P. SUS] button is ON.

1 is the shortest, and 5 is the longest decay time.

NOTE: You can locate this page by holding down the [P. SUS] button as well.

17 VELOCITY

This allows you to set the response to playing velocity. The setting range is OF and 1 - 4. At OFF, the volume does not change however hard you play the key. As the value increases from 1 - 4, the sounds gets louder even if the key is played softly.

18 KEY MODE

This allows you to set the Pedal polyphony.

POLY: Makes it possible to play chords (up to 3 notes).

MONO: Only the lowest note will sound, when you play a chord.

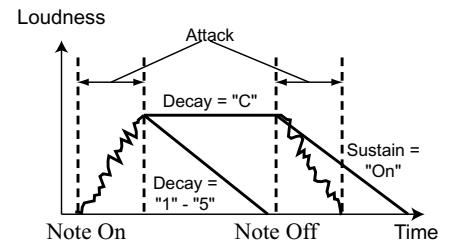
19 PEDAL ZONE - OCTAVE

Set the octave shift for the Pedal part. The setting range is -2 to +2.

20 PEDAL ZONE - LOW**21 PEDAL ZONE - HIGH**

Set the sounding range for the PEDAL part with these two parameters.

See page 102 for details of #19 to 21.

**tips SUSTAIN**

Unlike synthesizer nomenclature, on this keyboard "Sustain" refers to note decay after note release. On a synth envelope generator this setting would be called "T4" or "Release".

tips ZONE

The "ZONE" set in these modes is the setting of the sounding range for each part of the organ section.

See page 102 for details.

NOTE: All the parameters in these modes are Patch Parameters. They are recorded into the Patch.

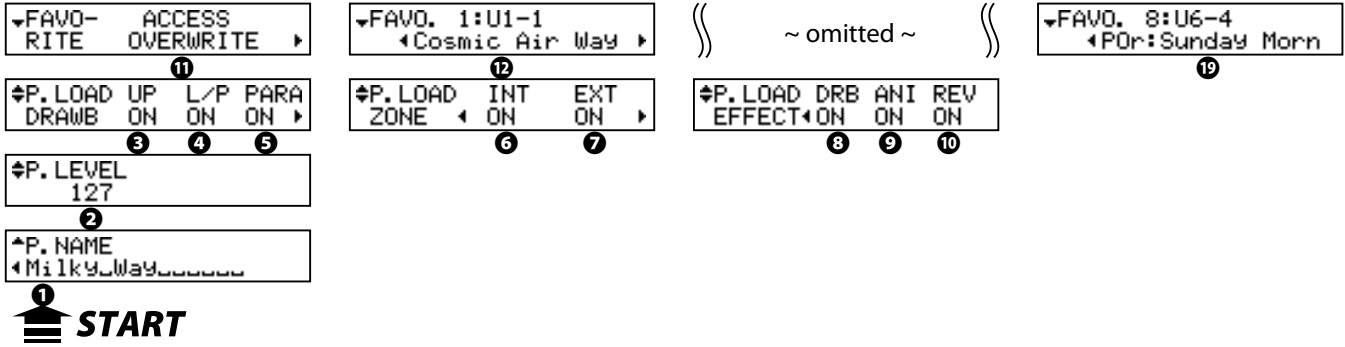
PATCH

In this mode you can name your patch, set which parameters load, and how to link to the Favorite buttons.

To locate this mode:



See the "Function mode" (P. 62) for operational details.



◆ PATCH NAME

① Patch NAME (P)

Name the present patch using up to 15 letters.

Move the cursor by the [◀][▶] buttons. Then select letters with the [VALUE] knob.

◆ PATCH LEVEL

② PATCH LEVEL (P)

Adjusts the present patch volume. It is controlled by MIDI control change #7 "Volume" also.

The setting range is 0 to 127.

NOTE: These parameters 1 and 2 (P) are Patch Parameter. They are recorded in each patch. They are lost unless you save the patch.

◆ PATCH LOAD

These are for setting which parameters are loaded when a patch is called. Sets whether or not to load:

③ PATCH LOAD - UPPER Registration (G)

Drawbar registration of the UPPER part.

④ PATCH LOAD - LOWER/PEDAL Registration (G)

Drawbar registration of the LOWER and PEDAL parts.

⑤ PATCH LOAD - DRAWBAR (G)

The parameters such as organ type or percussion.

⑥ PATCH LOAD - INTERNAL ZONE (G)

The parameters relating with Internal Zone or Coupler (Manual Bass).

⑦ PATCH LOAD - EXTERNAL ZONE (G)

The parameters specific to the External Zone to control external MIDI equipment.

⑧ PATCH LOAD - DRAWBAR EFFECT (G)

The parameters specific to the Patch Level and Effects (Overdrive, Multi-Effects, Equalizer).

⑨ PATCH LOAD - ANIMATION (G)

The parameters specific to the Leslie, Vibrato & Chorus effects.

⑩ PATCH LOAD - REVERB (G)

The Reverb parameters.

NOTE: Each Patch Load parameter is a Global Parameter. It is recorded when the value is set. Common for each patch.

◆ FAVORITES

⑪ FAVORITE ACCESS (G)

This is for setting the action of the Favorite Buttons.

ASSOCIATE:

Each number button calls the related patch.

If you touch a number button holding down the [RECORD] button, it relates the number button to the currently selected patch.

OVERWRITE:

In addition to above, if you touch each number button holding down the [RECORD] button, it records the current setting to the selected patch.

LOCKED 1-8:

Each number button calls the corresponding patch, U1-1 ... U1-8. If you touch a number button holding down the [RECORD] button, it records the current setting to the corresponding patch, U1-1 ... U1-8.

DIRECT:

This is for directly calling the patch, using the number buttons. To call a patch, enter the 3 digit patch number and then touch the [ENTER] button.

<Example>

to select lowest digit (U1-2 to U1-3) ... [3], [ENTER]

to select lower 2 digits (U1-2 to U2-3) ... [2], [3], [ENTER]

to specify all (U1-2 to P2-3) ... [2], [2], [3], [ENTER]

You can not associate the patch to each number button.

⑫ to ⑰ FAVORITE PATCHES (G)

Displays and changes the Patches related to each Number button.

You can enter the these page by pressing and hold the [1] - [8] button also.

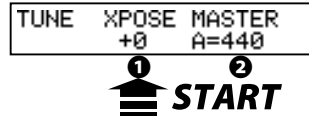
NOTE: "G" means "Global". These parameters will be recorded when set, and are common in each patch.

In this mode, the entire keyboard is tuned.

To locate this mode:



See “Function mode” (P. 62) for operation details.



◆ TRANSPOSE

① TRANSPOSE

You can set Transpose in the range from -6 to +6 semi-tones.

Transpose is mapped to the following points:

- i) Between the built-in keyboard and the on-board sound engines.
- ii) Between the MIDI IN and the on-board sound engines.
- iii) To the External Zone.
- iv) When the MIDI pedalboard XPK-100 is connected, transpose value will synchronize with it.

NOTE: Transpose is a temporary parameter, and is not recorded to any patch. When the power is switched OFF, it returns to 0.

◆ MASTER TUNE

② MASTER TUNE

This is for tuning the entire keyboard.

The setting range is A = 430 to 450 Hz.

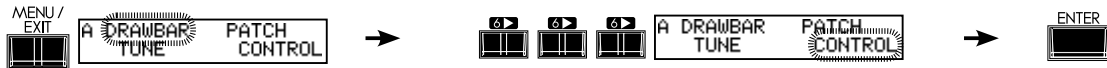
NOTE: Master Tune is a global parameter. It is recorded when it is set, and is common for each patch.

CONTROL

This mode is for setting the controller.

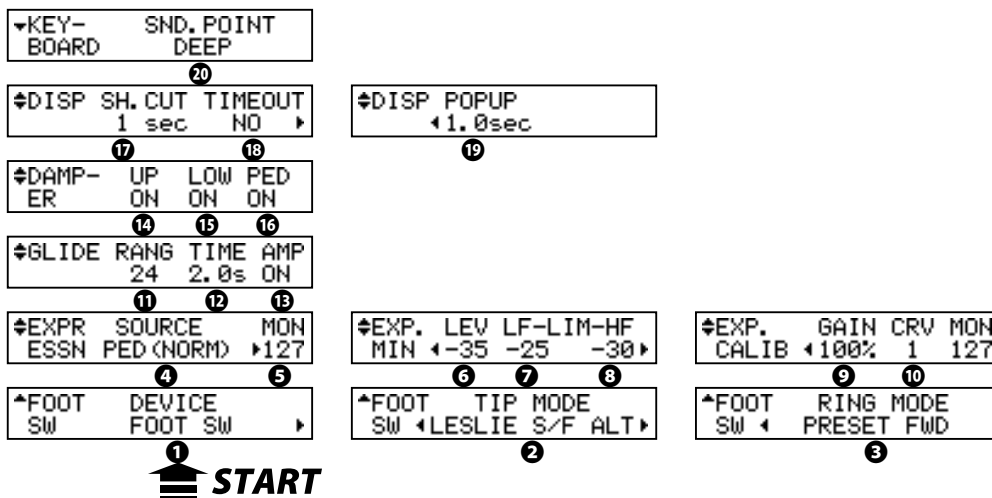
Please insure that the Expression Pedal and Foot Pedal are properly connected before adjusting their settings.

To locate this mode:



or, touch the [CONTROL] button.

See “Function mode” (P. 62) for operation details.



◆ FOOT SWITCH

1 FOOT SWITCH - DEVICE (G)

This is for selecting the equipment connected to the FOOT SWITCH jack.

FOOT SW: Foot Switch connected.

CU-1: Optional Leslie Mode Switch (CU-1) connected.

2 FOOT SWITCH - TIP MODE (G)

This sets the Foot Switch function.

OFF: Does not function.

LESLIE S/F ALT, MOM, TRI:

Switches the Leslie Effect Slow/Fast/Stop.

At **ALT**, Fast / not (Slow or Stop - it set by [STOP] button) is toggled every time the foot switch is pressed.

At **TRI**, it is switched to Stop when the foot switch is further held down for longer than a second.

At **MOM**, it is switched to Fast only while the foot switch is held down. When released, it switches to not (Slow or Stop - it set by [STOP] button).

GLIDE:

The pitch bends while the foot switch is pressed down the interval is determined by a parameter setting.

PATCH FWD, REV:

Advance the Patch Forward or Reverse it.

FAVORITE FWD, REV:

Advance the Favorite Forward or Reverse it.

SPRING:

This generates the sound of the spring reverb being shaken.

DELAY TIME:

Sets the delay time (P. 86, 95) of the Effects, at the interval of pressing the foot switch. The delay sound goes out, while the foot switch is held down.

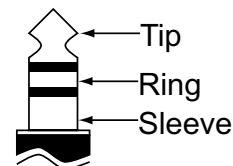
DAMPER:

Holds played notes while the foot switch is depressed as does the damper pedal on a piano.

tips TIP AND RING

The typical stereo plug, there are 3 metal parts. The end is called the “Tip”, the middle portion is the “Ring”. The part on the cord side is called the “Sleeve”.

This keyboard requires a foot switch that uses a Stereo Jack. Two Mono-Jack foot switches may be used, and can have discrete functions, if a Left/Right stereo splitter is used.



tips SPRING REVERB

The Hammond Organ company actually invented the spring reverb for its organs in the 1940's. The effect was obtained with a length of spring and a few pickups. If the spring was disturbed, it would make a large crashing noise that was usually considered a nuisance, but sometimes was used as a program sound effect. The Reverb here is digital, but the “crash” effect is re-created here.

MANUAL BASS:

Triggers the Manual Bass note of Pedal part.

BASS 1C - BASS 3C

Triggers the specified note of Pedal part.

③ FOOT SWITCH - RING MODE (G)

This sets the Ring side function, when the foot switch connected to the foot switch jack is of the TRS (Tip, Ring, Sleeve) specifications.

◆ EXPRESSION**④ EXPRESSION - SOURCE (G)**

Sets the source of expression control.

PED (NORM):

For the (Optional) Hammond-Suzuki EXP-50 or EXP-20 pedal etc.

PED (REV):

For using a Korg XVP-10 type of Expression Pedal etc.

MIDI: For using expression information received at the UPPER keyboard channel.

⑤ EXPRESSION - MONITOR

Displays the current value of expression. In case of no sound or no change when the expression pedal is pressed, this monitor shows whether the expression value changes or not, so you may discover the cause of trouble (if any). This can also be an indicator when playing from low volume to fade in.

⑥ EXPRESSION - MINIMUM LEVEL (G)

Sets the volume at minimum expression.

The setting range is OFF, -40dB to 0dB. At OFF the instrument is silent when Pedal is at Minimum (all the way back). The other value points represent the lowest volume that will be present at the Pedal's minimum position.

⑦ EXPRESSION - LIMIT LOW FREQUENCY (G)**⑧ EXPRESSION - LIMIT HIGH FREQUENCY (G)**

Sets the amount of Low or High Frequency to remain, when the expression 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 volume is kept, even if the expression is at minimum.

⑨ EXPRESSION - GAIN (S)

Sets the gain (range) of the connected expression pedal.

Depending on the type of the connected expression pedals, the expression value may not change. In such case, adjust this parameter to obtain the desired response.

⑩ EXPRESSION - CURVE (S)

Adjusts change of expression value corresponding to the angle of the depressed expression pedal.

The setting range is 1 to 3. Refer each curve to the bottom right illustration or try playing live to discern which curve is correct for you.

NOTE: The parameters indicated (S) are system parameters. They are recorded when set, and are common in each Patch.

◆ GLIDE**⑪ GLIDE - RANGE (P)**

Sets the bend range of pitch by semi-tone. Setting range is -24 to +12.

⑫ GLIDE - TIME (P)

Sets the time from the start of glide to reach the pitch set at (11). The setting range is 0.1 to 5.0 seconds.

⑬ GLIDE - AMP (P)

Engages a "fade" along with the Glide, where the volume drops in tandem with the pitch to total silence.

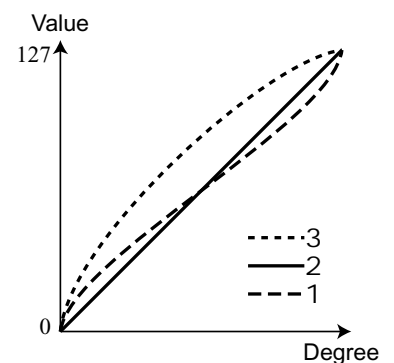
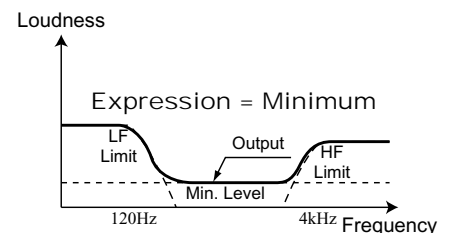
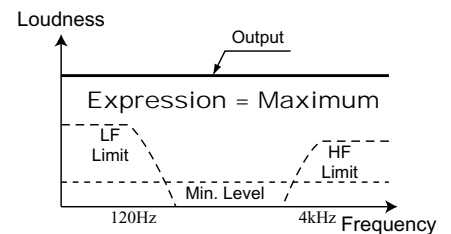
tips**3RD PARTY EXPRESSION PEDAL**

When using a Korg XVP-10 type of pedal, connect the EXPRESSION jack of the XVP-10 to the EXP. PEDAL jack of the this keyboard with a TRS (Tip, Ring, Sleeve) cable.

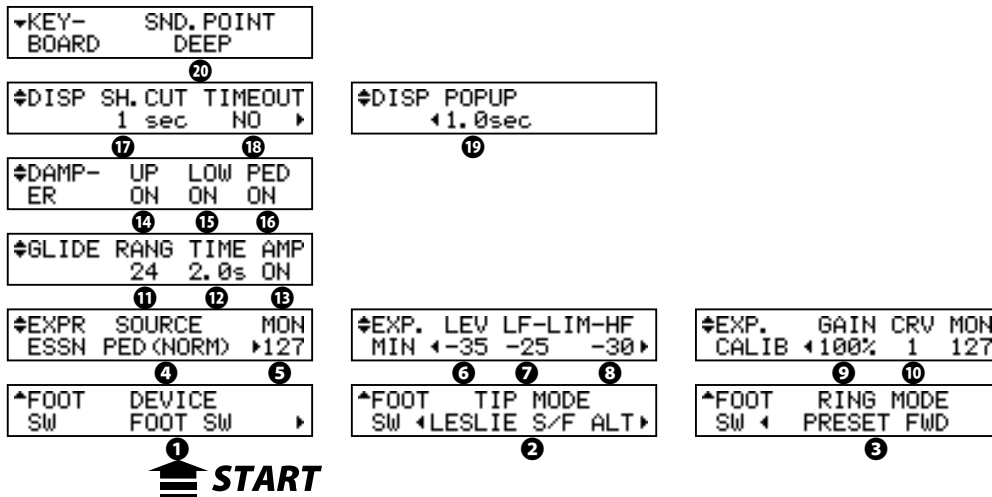
tips**EXPRESSION LIMIT**

One of the human ear's characteristics is that when the volume falls, the sound of the high or low frequencies becomes difficult to hear. Using expression limit, you can hear the revised frequency response.

Vintage B-3 preamps age in different ways-one symptom is the organ's timbre may change with Expression pedal travel. This is a desirable characteristic for some.



NOTE: The parameter with (P) indicated is a patch parameter, and is recorded to each patch. (G) indicates "global parameter", which is recorded upon being set, and is common with each patch.



◆ **DAMPER**

- 14 **DAMPER - UPPER (G)**
- 15 **DAMPER - LOWER (G)**
- 16 **DAMPER - PEDAL (G)**

Assigns the DAMPER to the various divisions of the this keyboard.

◆ **DISPLAY**

- 17 **DISPLAY - SHORT CUT (G)**

Sets the short cut waiting time.

The setting range is 0 to 2 seconds. At NO the short cut feature is disabled.

- 18 **DISPLAY - TIME OUT (G)**

Sets 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.

- 19 **DISPLAY - POP UP (G)**

Sets the interval at which the Pop Up is displayed when you move the [OVERDRIVE] knob.

The setting range is 0.5 to 2 seconds. At NO no Pop Up is displayed.

◆ **KEYBOARD**

- 20 **SOUNDING POINT (S)**

Set the sounding point of the built-in keyboard is played.

DEEP All the section sounds on the deep point in the stroke.

AUTO The organ sound at the shallow point when striking the keys lightly, it makes a very lively direct way of playing possible, But when the parameter "Percussion - Velocity" (P. 76 #6) is used the sounding point is always deep.

tips **DAMPER**

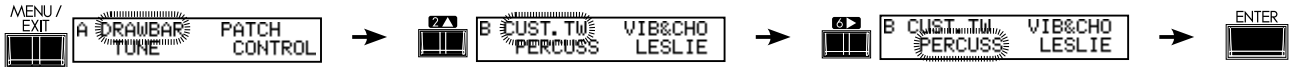
Or "Sustain" pedal-analogous to the RIGHT pedal on a piano. Sounds are held when this pedal is depressed. Called "Damper" due to the fact that when the pedal was depressed on a piano, the mechanism that muted or "damped" the strings was raised, allowing the piano strings to ring free.

NOTE: The parameter with (P) indicated is a patch parameter, and is recorded to each patch. (G) indicates "global parameter", (S) indicates "system parameter", which is recorded upon being set, and is common with each patch.

PERCUSS (Percussion)

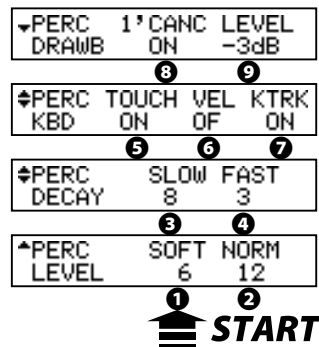
This mode is for setting the parameters of the percussion sounds.

To locate this mode:



or, keep pressing either of the [ON], [THIRD], [FAST], [SOFT] buttons for a moment.

See “Function mode” (P. 62) for operation details.



1 LEVEL SOFT

2 LEVEL - NORMAL

Controls the percussion volume levels. The Normal level is set by the NORM setting, and SOFT is the level when the [SOFT] button is ON.

3 DECAY - SLOW

4 DECAY - FAST

Controls the percussion decay time. The Slow rate is set by SLOW setting, and FAST is the time when the [FAST] button 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.

5 KEYBOARD - TOUCH

Sets the touch response of the percussion.

ON: Legato playing will result in the First note hit engaging the percussion, and none after.

OFF: The envelopes reset with each key hit and percussion sounds on every note.

6 KEYBOARD - VELOCITY

Links the percussion volume to velocity.

ON: A harder strike produces a louder percussion sound.

OFF: Regardless how hard you play, the volume remains the same.

7 KEYBOARD - KEY TRACK

Attenuates the percussion volume by keyboard position.

ON: The higher the note is, the lesser the volume.

OFF: No change in volume.

8 DRAWBAR - 1' CANCEL

Mutes the UPPER 1' Drawbar while using the percussion.

ON: Mute active

OFF: No mute.

9 DRAWBAR - LEVEL

Reduces the UPPER Drawbar volume while using the percussion (except [SOFT] button is ON).

-5dB: Reduces the volume in similar response to the classic B-3/C-3.

-3dB: Slight reduction in volume.

0dB: Does not reduce the volume.

NOTE: All the parameters of these modes are patch parameters, and are recorded to the respective patches.

tips TOUCH

The percussion generator on the vintage B-3/C-3 had a single envelope, which would not recycle until all keys were raised. Originally thought to be a defect, the resulting response became a desired trait.

tips 1' CANCEL

The B-3/C-3 had no exclusive key contact for the percussion, but, used the 1' contact. This is simulated on this keyboard.

tips DRAWBAR LEVEL

When the percussion was activated on the B-3/C-3, the volume of the Drawbars became slightly softer in volume. This is simulated on this keyboard.

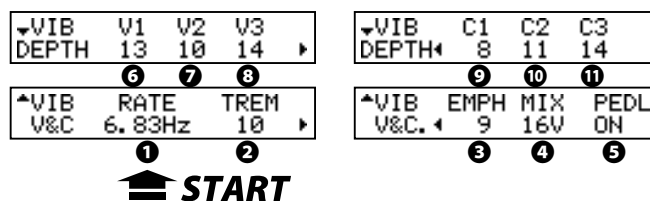
In this mode, the settings specific to Vibrato and Chorus are adjusted.

To locate this mode:



or, keep pressing either of the [V1/C1], [V1/C2], [CHORUS], [ON UPPER], [ON LOWER] buttons for a few seconds.

See “Function mode” (P. 62) for operation details.



1 RATE

Sets the Speed of the Vibrato and Chorus effect.
The setting range is 6.10 - 7.25 Hz.

2 VIBRATO - TREMOLO

Sets Tremolo (amplitude modulation) of the Vibrato and Chorus effect.
The setting range is 0 - 15.

3 EMPHASIS

Sets Emphasis (high frequency boost) of the Chorus effect (C1 / C2 / C3).
The setting range is 0 - 9 dB.

4 MIX

Sets Mix balance of the Chorus effect (C1 / C2 / C3).
The setting range is D64 (only the Direct tone, no vibrato tone) - EVEN - 63V (only the Vibrato tone, no direct tone).

5 PEDAL

Sets Vibrato and Chorus on the Pedal part by [LOWER] button.
The setting range is ON/OFF.

6 DEPTH V1

7 DEPTH V2

8 DEPTH V3

9 DEPTH C1

10 DEPTH C2

11 DEPTH C3

Sets the Depth of each Vibrato and Chorus effect mode.
The setting range is 0 - 15.

NOTE: The parameters in these modes are Preset Parameters and are recorded to each Preset.

tips CHORUS EFFECT

The Hammond Chorus/Vibrato is not an everyday DSP effect. It is a re-creation of the vintage mechanical scanner that was included on-board the classic B-3, through executed in the digital realm.

tips PEDAL

On the vintage B-3/C-3, the Vibrato and Chorus affects not only Lower part but also the Pedal part via [LOWER] (on the B-3, “GREAT”) tablet by the circuit structure. It is divided on later models.

This parameter simulates that.

NOTE: All the parameters in these modes are Patch Parameters. They are recorded into the Patch.

In this mode, the settings are made for the on-board Leslie Effect and the External Leslie Speaker.

There are many parameters related to the Leslie effect, but they cannot set each parameter every Patch by Patch.

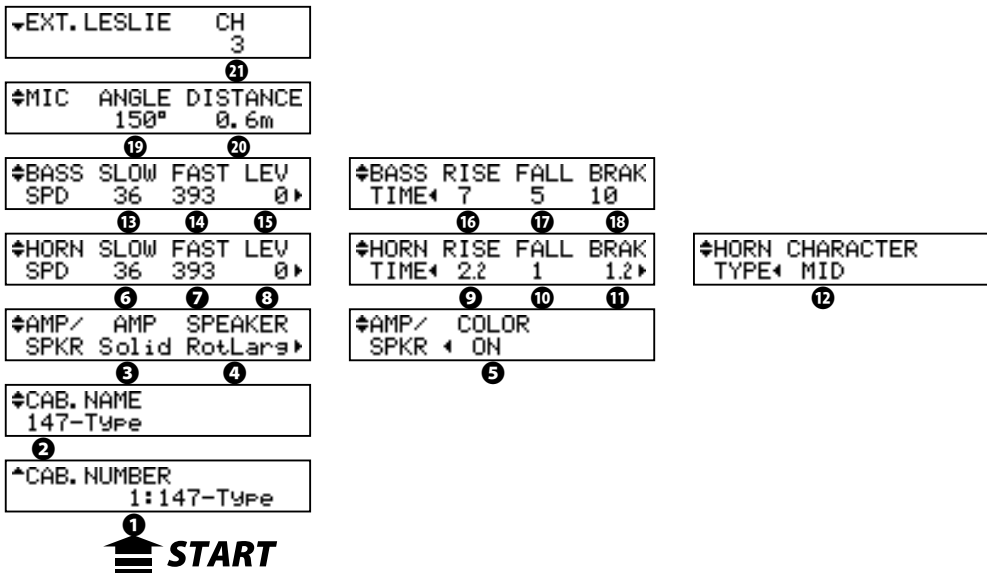
The on-board Leslie parameters are grouped in macro-settings called “CABINETS”. You select the CABINET NUMBER in the Patches where this selection is saved as part of the Patch.

To locate this mode:



or, keep pressing either of the [BYPASS], [STOP], [FAST] buttons for a few seconds.

See “Function mode” (P. 62) for operation details.



◆ **CABINET NUMBER**

❶ **CABINET NUMBER (P)**

Selects the Cabinet Number to use in the Patch.

The setting range is P1 to P8 (not-overwritable) and U1 to U8 (overwritable). If any of the Leslie parameter are edited, “*” is displayed on the left side.

◆ **LESLIE PARAMETERS**

❷ **CABINET NAME (L)**

Sets the Cabinet Name by up to 10 characters.

Move the cursor with the [◀][▶] button and select letters with the [VALUE] knob. Allowable values are: symbols, digits and the large and small Alphabet.

The name and following (L) parameters are not recorded until the Cabinet Macro is recorded into memory (See the next paragraph.)

❸ **AMP (L)**

This is for setting the type of the virtual Amplifier.

Solid: Flat characteristic Amp

Tube: Tube-style amp with Mild characteristics.

❹ **SPEAKER (L)**

This is for setting the virtual Speaker.

RotSmall: A small Leslie speaker, such as the Leslie 145

RotLarge: A large Leslie speaker, such as the Leslie 122

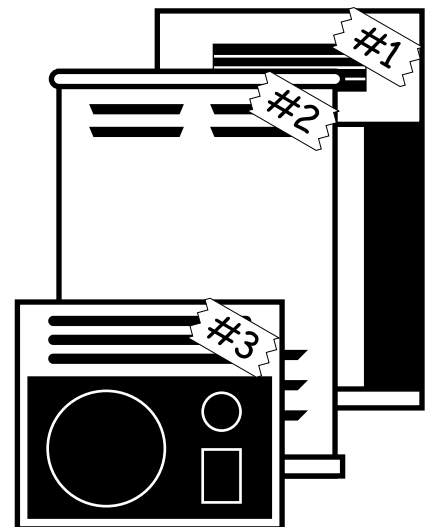
Station: A fixed speaker, such as the Hammond PR-40

tips

CONCEPT OF THE CABINET NUMBER

One Cabinet is equivalent to a virtual Leslie speaker made with the Leslie parameter.

This is a Patch parameter.



5 COLORATION(L)

Switches On/Off the coloration of the speaker enclosure.

6 SLOW SPEED - HORN (L)**13 SLOW SPEED - BASS (L)**

Sets the speed of the rotor at slow mode.

The setting range is 0, 24 to 318 rpm. At 0, no rotation.

7 FAST SPEED - HORN (L)**14 FAST SPEED - BASS (L)**

Sets the speed of the rotor at the fast mode.

The setting range is 0, 375 to 453 rpm. At 0, no rotation.

8 HORN LEVEL (L)**15 BASS LEVEL (L)**

Sets the volume of each rotor. The setting range is 0 to -12dB.

9 RISE TIME - HORN (L)**16 RISE TIME - BASS (L)**

Sets 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 5.0sec., and the Bass Rotor is 0.5 to 12.5sec.

10 FALL TIME - HORN (L)**17 FALL TIME - BASS (L)**

Sets 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 5.0sec., and that for the Bass Rotor is 0.5 to 12.5sec.

11 BRAKE TIME - HORN (L)**18 BRAKE TIME - BASS (L)**

Sets 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 5.0sec., and the Bass Rotor is 0.5 to 12.5sec.

12 HORN CHARACTER (L)

Sets the tone of the Horn Rotor.

“FLAT” has no boost or cut in frequencies, and the “MID” or “DEEP” have “peaks” in various tonal ranges, to mimic the particular characteristics of the horns.

19 MIC - ANGLE (L)

Sets the virtual locations of the two virtual microphones for the virtual Leslie Speaker.

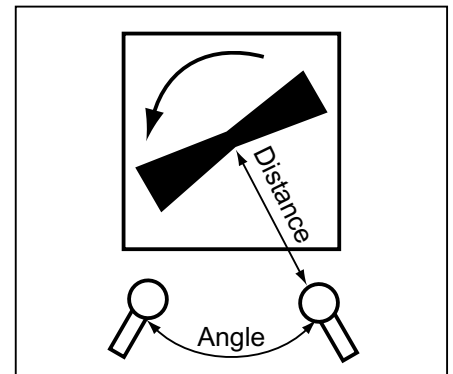
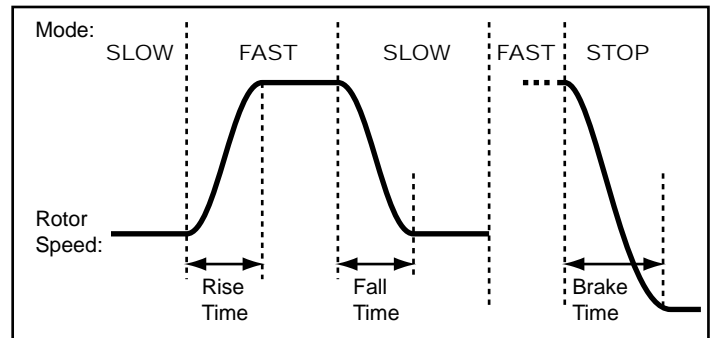
The ANGLE decides the distance between the two virtual mikes. The setting range is 0 to 180°. Farther settings exhibit more stereophonic characteristics.

20 MIC - DISTANCE (L)

Sets the distance between the virtual Leslie Speaker and the virtual microphones.

The setting range is 0.3 to 2.7m. Setting the range “further away” will result in a less intense sound.

NOTE: When you operate the parameters 2 to 20, the setting range will be lost upon selecting another Cabinet, another Patch or powering OFF the unit, unless you record the changes into the User “Cabinet” (procedure following).



◆ EXTERNAL LESLIE SPEAKER

21 LESLIE CHANNELS

Sets the channel for the Leslie speaker connected to the LESLIE 8-PIN jack.

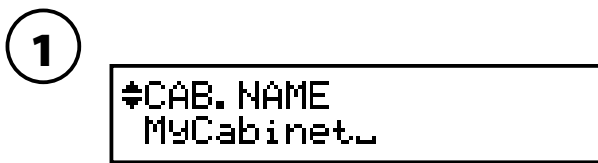
1ch: For connecting a 1 channel Leslie cabinet such as the 122XB, 3300/3300W (with no stationary speakers). The Drawbar and the percussion sounds are output only from the rotary channel always. The Pipe voices are from the LINE OUT jack.

3ch: This is for connecting a 3 channel Leslie cabinet such as the 2101/mk2. The Drawbar and the percussion sounds are output from the rotary channel, the Pipe voices and bypassed Drawbar and percussion sounds are from the stationary channel of the Main and Aux.

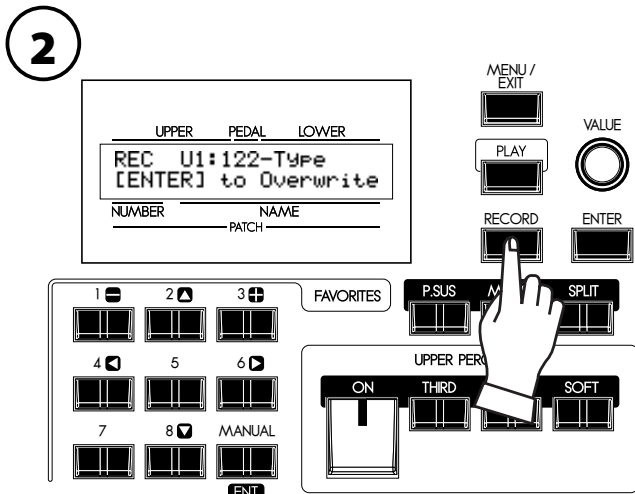
NOTE: This is a system parameter. It is recorded upon setting, and is common with all patches.

RECORD THE CABINET

Record the Leslie Parameter (#2 to #20 on the previous page) to the Cabinet Numbers and use them selecting at the patches.

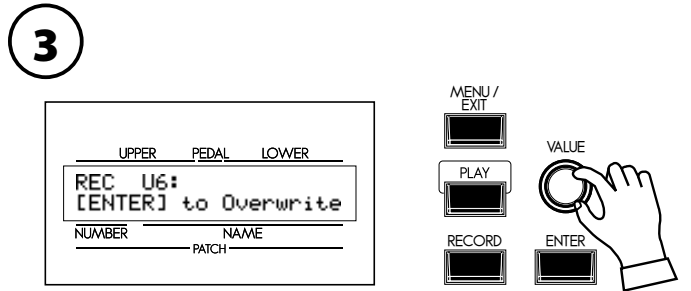


Give a name to the cabinet as desired.

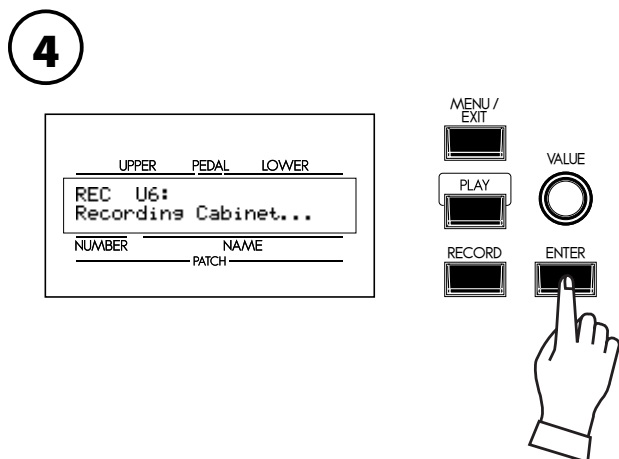


Press the [RECORD] button in the Leslie Parameter setting mode (#2 to #20).

The Cabinet Select mode is displayed.



Select the Cabinet Number to record with the [VALUE] knob.



Recording is made upon pressing the [ENTER].

The display is as the above during the treatment.

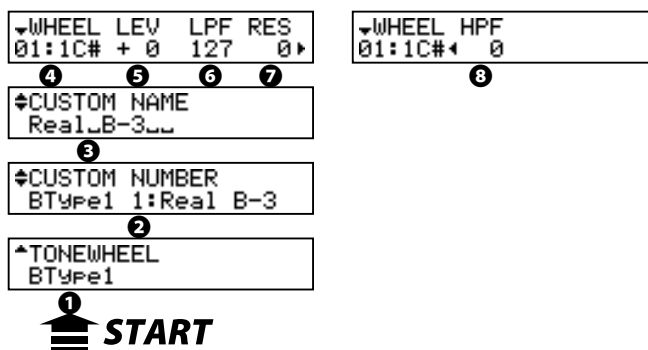
NOTE: If you don't wish to record, touch the [MENU/EXIT] button.

In this mode, you select or edit the characteristics of each tone wheel set to be used on the manual keyboards.

To locate this mode:



See “Function mode” (P. 62) for operation details.



1 TONEWHEEL SET

Selects the virtual Tonewheel sets to edit: “BType1”, “BType2” and “Mellow”.

Also, the temporary (= the present setting) automatically switches to the selected virtual Tonewheel set just selected now.

2 CUSTOM NUMBER (P)

This is for selecting the “CUSTOM NUMBER” to use or compile. The symbol “*” will be displayed when the virtual Tonewheel Parameters are edited.

NOTE: This parameter is a Patch Parameter. It is recorded into the Patch.

3 CUSTOM NAME

You can name the CUSTOM virtual TONEWHEELS set using up to 10 letters.

Move the cursor by the [◀] [▶] button and choose the letters by the [VALUE] knob or [-] [+] button.

The name set here, as well as the Tonewheel Parameters below, will be discarded, if not recorded (procedure following).

4 WHEEL NUMBER

Select the Number of the Wheel you want to regulate.

To select the Wheel Number, select the [VALUE] 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 (#5, #6, #7, #8) is displayed.

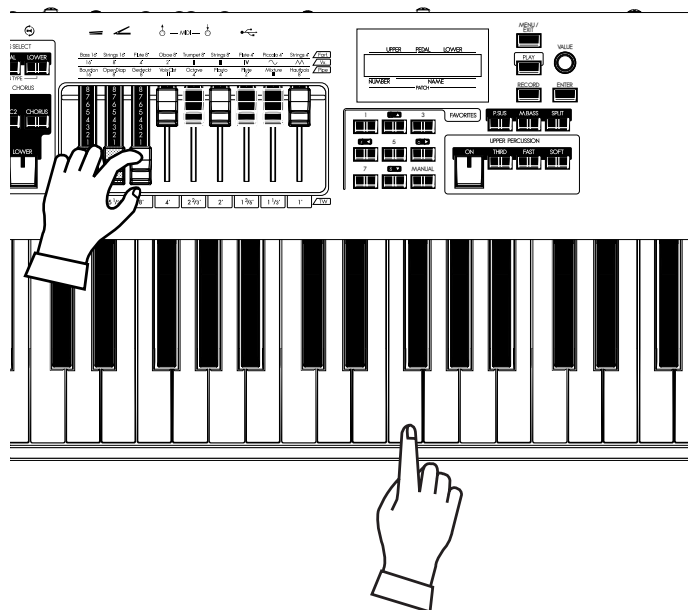
NOTE: Set the [TRANSCOPE] and [OCTAVE] at “0” to select a correct wheel.

tips

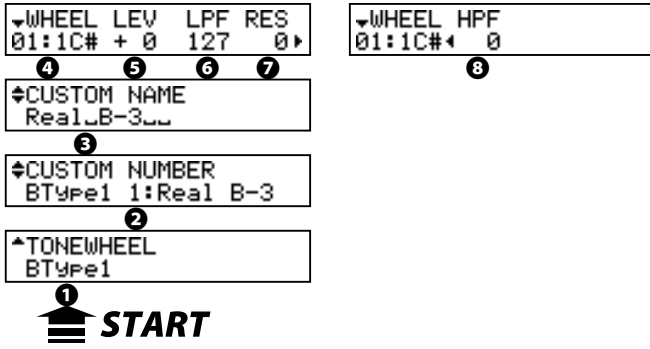
INITIAL VALUE OF THE CUSTOM NUMBER

The typical settings are saved to the Number 1 - 4, as the initial value.

For example, to the BType1, “Real B-3” simulating the well-preserved B-3/C-3 and “80’s Clean” with less noise, rough sound “Noisy”, and “Noisy 60” with louder leakage noise is stored.



How to select the WHEEL NUMBER



5 LEVEL

This is for setting the volume of a virtual wheel.
The setting range is -20 to +2dB. If you increase the value, it gets louder.

6 CUT OFF FREQUENCY - LPF

This is for setting the FREQUENCY to cut the TREBLE of a virtual wheel.
If you increase the value, a leakage noise is heard besides the original Tonewheel pitch.
If you decrease the value, the sound gets sweet and mild, as the treble is cut off.
The setting range is 0 - 127.

NOTE: If you decrease the value too low below the fundamental Tonewheel pitch, the wheel volume will be reduced.

7 RESONANCE - LPF

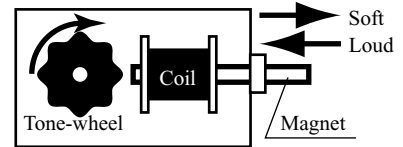
This adjusts the boost or reduction of the level surrounding the Cut Off Frequency - LPF (#6). [sometimes called “Q” in synth technology]
The setting range is 0 - 127. The higher value boosts treble, and lower values cut treble smoothly.

8 CUT OFF FREQUENCY - HPF

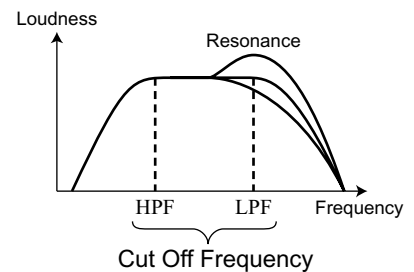
This is for setting the FREQUENCY to cut the BASS of this wheel.
If you decrease the value, a motor hum (= noise) is heard besides the original virtual Tonewheel sound.
The setting range is 0 - 127.

NOTE: If you increase the value too high above the original tonewheel pitch, the sound will get “Thin”.

NOTE: Editing and Recording any Custom Tonewheel profile (#3 to #8) will affect any Patch using that Profile. After editing, you must record your changes to save them (Procedure following).



Concept of the LEVEL ADJUSTMENT



tips LEAKAGE NOISE

In the vintage electro-mechanical Hammonds, sometimes the signal from adjacent tonewheels would be picked up (or “leaked”) along with the current tonewheel in play. This “hash” noise, another Hammond anomaly originally considered to be a defect grew to be an integral part of the Hammond sound.
“Mellow” does not include the Leakage Noise.

tips DISTORTION

If you raise the Level and Resonance values too much, it changes the gain in the sound engine and may sometimes cause distortion, or unpleasant noise.

Record the CUSTOM virtual TONEWHEELS setting

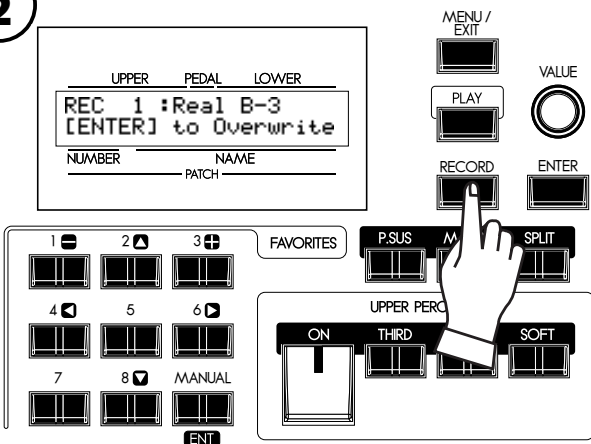
The Tonewheel Parameters (= 3 - 8 of the previous paragraph) are for determining the Custom Number for recording. The Custom Number is selected and used, when you play.

1



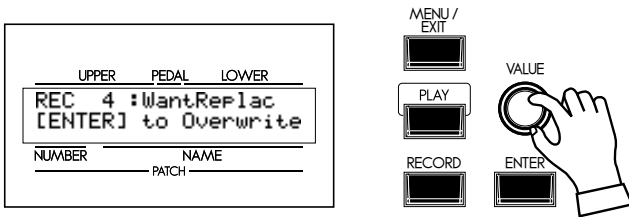
Enter the Custom Name if desired.

2



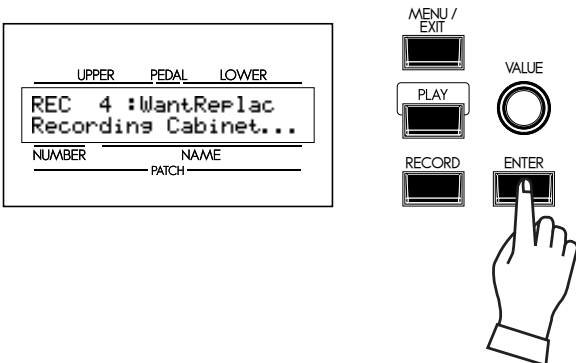
Touch the [RECORD] button in the setting mode of the Tonewheel Parameters.
The mode for selecting the Custom Number to be recorded will be displayed.

3



Select the Custom Number to be recorded by the [VALUE] knob.

4



It will be recorded if you touch [ENTER] button.
The display will be as illustrated, while the recording is treated.
NOTE: To dismiss the record sequence, touch the [MENU/EXIT] button.

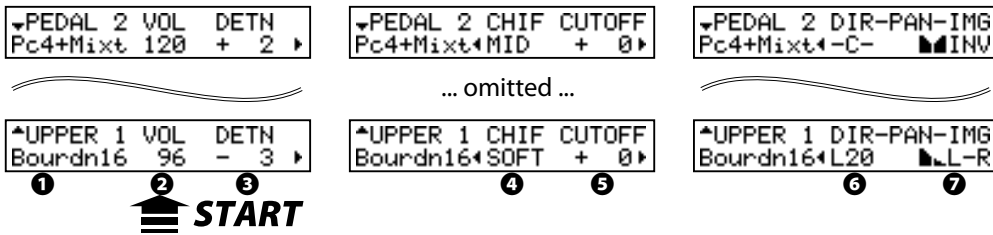
PIPE

In this mode, you edit the characteristics of each pipe.

To locate this mode:



See “Function mode” (P. 62) for operation details.



1 PIPE NUMBER

Select the PIPE which you desire to edit by [\blacktriangle],[\blacktriangledown] buttons.

There are 20 pipes which according to Drawbars from “Bourdon 16” to “Principal Chorus 4’ + Mixture IV” (P. 44).

2 VOLUME (Pi)

Adjusts the volume of the pipe. The setting range is 0 to 127.

3 DETUNE (Pi)

Detunes the pitch of pipe from accurate pitch by cent ($\frac{1}{100}$ of semitones).

The setting range is -50 - 0 - +50.

4 CHIFF (Pi)

Sets the “Chiff” noise of beginning of notes.

OFF: No sounds the chiff noise.

SOFT: Sounds the chiff noise slightly.

MID: Sounds the chiff noise medium.

LOUD: Sounds the chiff noise maximum.

NOTE: Some pipes does not affect the chiff parameter i.e. “Hautbois 8”.

5 CUT OFF FREQUENCY (Pi)

Adjusts the tone quality of the pipe.

The setting range is -64 to 0. At 0, all of pipe sounds are heard. The sound becomes mellower by the decreases value.

6 PAN - DIRECTION (Pi)

Adjusts the basic direction of the pipe.

The setting range is L64 - C - R63 (Left - Center - Right).

tips DETUNE

The beating is heard by sounding detuned pitch on sounding accurate pitch.

Each pipe can be detuned for comfortable beating. But it may out of tune by too much detune.

Generally, they are effective that set at “-” side for lower octave pipes, set at “+” side for upper octave pipes.

tips CHIFF

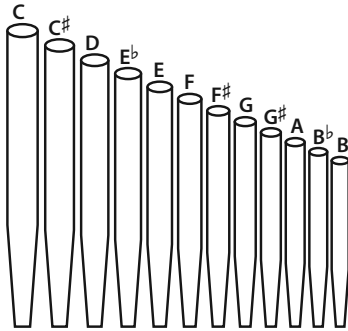
The slight puff of air that is heard from certain pipes upon playing.

7 PAN - IMAGING (Pi)

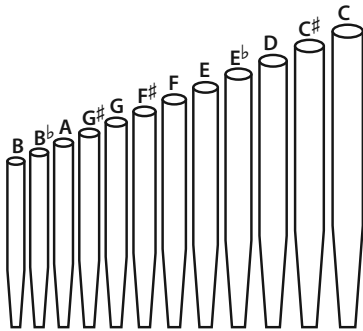
Sets the arrangement of the pipe.

FIX: Sounds the FIXEd direction which set by #6 for all notes.

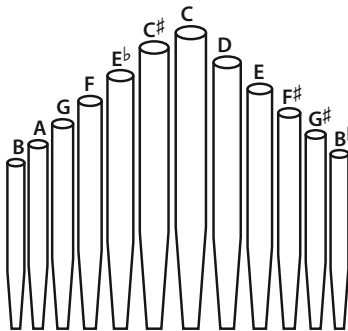
L-R: Sounds Left to Right which according to the keys.



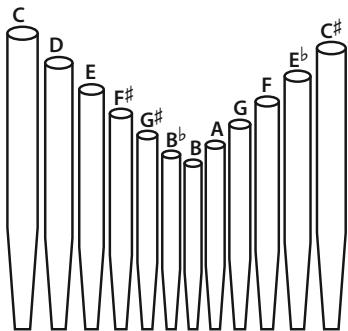
R-L: Sounds Right to Left which according to the keys.



PYR: Like the PYRamid, sounds center to sides which according to the keys.



INV: Like the INVerted pyramid, sounds sides to center which according to the keys.



tips MISSING OR UNEVEN VOICE?

The pipe stops are spread in a stereo array. If this keyboard connected in MONO, and the this keyboard system is set to "Stereo", some notes and voices may be missing, or sound uneven. In that case, set the "Audio mode - Output" (P. 97 #1) at "MONO".

This will disable the Pipe Stereo Imaging.

NOTE: The parameters of these modes (Pi) are Pipe parameters. They are recorded when they are set, and are common for each patch.

OD / EFF (Overdrive / Effects)

In this mode, Overdrive and the Multi-Effects are adjusted.

To locate this mode:



Or, turn the [OVERDRIVE AMOUNT] knob with pressing [MENU/EXIT] button.

See “Function mode” (P. 62) for operation details.

▼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

① ② ③ ④
START

OVERDRIVE

① OVERDRIVE - SWITCH

Turns the Overdrive “On / Off”.

② OVERDRIVE - DRIVE

Adjusts the drive component of the Overdrive. The higher you raise the value, more distortion is obtained. It is linked with the [OVERDRIVE AMOUNT] knob on the top panel.

③ OVERDRIVE - EXPRESSION

Sets the response of Overdrive to Expression Pedal Value.

EX-OD:

Overdrive effect increases/decreases along with volume.

OD-EX:

Overdrive effect remains constant, only volume increases/decreases.

OD ONLY:

Volume remains constant, Expression pedal increases/decreases overdrive effect.

INPUT:

Expression pedal attenuates INPUT level to Overdrive effect. Lesser Volume control.

④ OVERDRIVE - TYPE

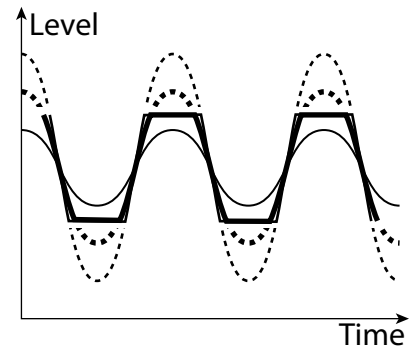
Sets the characteristic of the Overdrive.

Tube: Replicates a tube-driven amp.

Solid: Replicates a solid-state stomp box.

Clip: Accurate hard clip.

EPAmpl: Replicates the pre-amplifier of an electric piano.



MULTI-EFFECTS

⑤ EFFECT - SWITCH

Turns the Multi-Effects “On / Off”.

⑥ EFFECT TYPE

Selects the Multi-Effect type. The following effects are available.

Tremolo, Auto Pan, Wah-Wah, Ring Mod., Phaser, Flanger, Chorus, Delay

The parameters for the Multi-Effects are vary by type (following).

Tremolo

Tremolo modulates the volume at a set cycle.

▼EFF	EFFECT TYPE
ON	Tremolo ▶

6

▼EFF	WAVE	RATE	DEP
Trem	TRI	64	64

7

8

9

7 TREMOLO - WAVEFORM

Sets 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.

8 TREMOLO - RATE

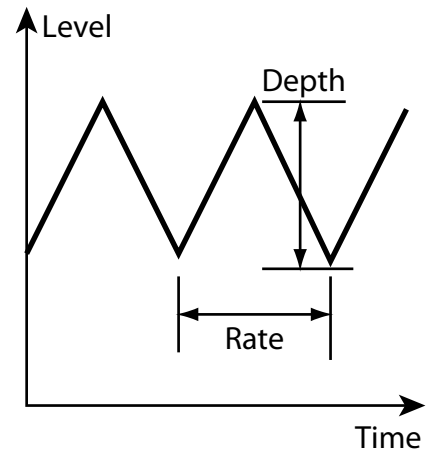
Adjusts the speed of the tremolo cycle.

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

9 TREMOLO - DEPTH

Adjusts 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.



Auto Pan

Auto Pan applies adjustable modulation to the stereo field.

This is not applicable if a monophonic (one channel) amp is used, or when the Leslie effect / Leslie speaker is used.

▼EFF	EFFECT TYPE
ON	Auto Pan ▶

6

▼EFF	WAVE	RATE	DEP
APan	TRI	64	64

7

8

9

7 AUTO PAN - WAVEFORM

Sets 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).

8 AUTO PAN - RATE

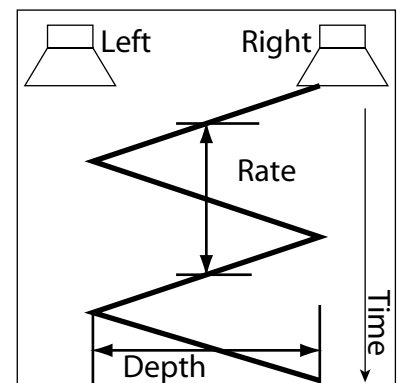
Adjusts the speed of the modulation.

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

9 AUTO PAN DEPTH

Adjusts 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.



NOTE: All the parameters in these modes are Patch Parameters. They are recorded into the Patch.

Wah-Wah

Wah-Wah imposes a “speech-like” dynamic to the sound.

▼EFF	EFFECT TYPE	▶
ON	Wah-Wah	

6

▼EFF	SRC	SENS	RES	▶
Wah	◀LFO	64	64▶	

7 8 9

▼EFF	WAVE	RATE	FREQ	▶
Wah	◀Tri	64	64▶	

10 11 12

7 Wah-Wah - SOURCE

Selects the source of the WAH control.

EXP: Uses the Expression Pedal like a “Wah Wah pedal”.

LFO: Auto-Wah using the built-in ‘LFO - Low Frequency Oscillator’.

8 Wah-Wah - SENSITIVITY

Sets 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.

9 Wah-Wah RESONANCE

Boosts 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.

10 Wah-Wah - WAVEFORM

When the SOURCE (7) 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: Saw-tooth wave. Repeated changes in the sound are obtained.

S&H: Sample & Hold. Random sound changes are obtained.

11 Wah-Wah - RATE

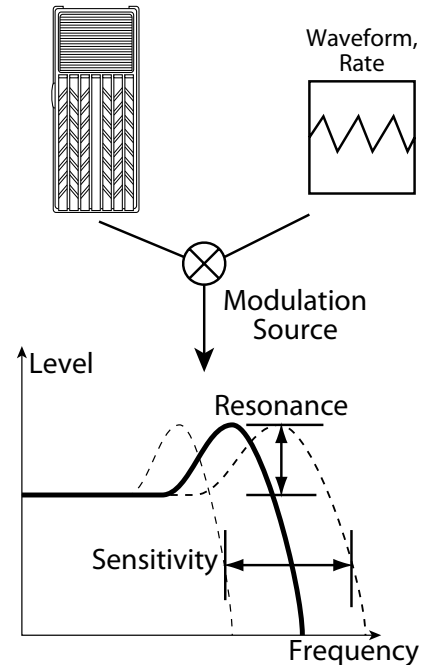
When the SOURCE (7) is set at LFO, the cycle speed is adjusted.

The setting range is 0 to 127. The cycle becomes faster as the value increases.

12 Wah-Wah - FREQUENCY

Adjusts the central frequency.

The setting range is 0 to 127. The frequency becomes higher as the value is increased.



Ring Mod.

The Ring Modulator creates complex, metallic-like sounds by taking the sum and difference of the fundamental tone and a second “ring” frequency.

▼EFF	EFFECT TYPE
ON	Ring Mod.

6

▼EFF	SRC	FREQ	MIX
RMod	MAN	64	64

7 8 9

▼EFF	WAVE	RATE	DEP
RMod	Tri	64	64

10 11 12

7 RING MODULATOR - SOURCE

Selects 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.

8 RING MODULATOR - FREQUENCY

Adjusts the central ring frequency.

The setting range is 0 to 127. The frequency becomes higher as the value increases.

9 RING MODULATOR - MIX

Adjusts 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.

10 RING MODULATOR - WAVEFORM

When the SOURCE (7) 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.

11 RING MODULATOR - RATE

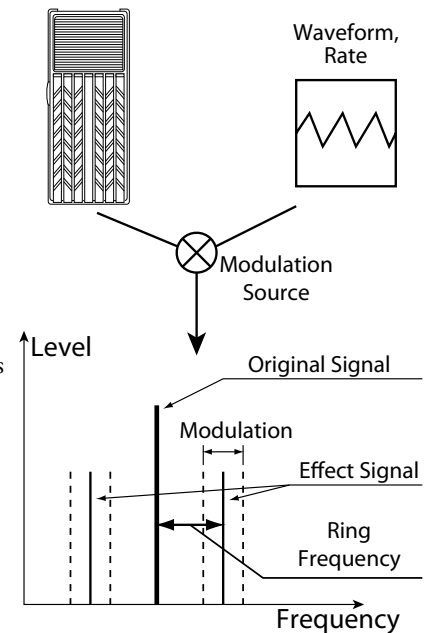
When the SOURCE (7) is set at LFO, the frequency speed is adjusted.

The setting range is 0 to 127. The cycle becomes faster as the value is raised.

12 RING MODULATOR - DEPTH

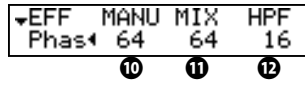
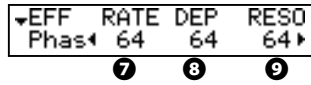
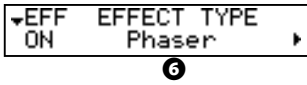
Adjusts the depth of the frequency change when the source is set at LFO or EXP.

The setting range is 0 to 127. The ring frequency becomes wider as the value is raised.



Phaser

This effect adds a twisting character to the sound by shifting phase.



7 PHASER - RATE

Adjusts the frequency speed.

The setting range is 0 to 127. The cycle becomes faster as the value increases.

8 PHASER - DEPTH

Adjusts the depth of modulation.

The setting range is 0 to 127. The modulation becomes deeper as the value increases.

9 PHASER - RESONANCE

Adjusts 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.

10 PHASER - MANUAL

Sets the middle frequency of the phase effect.

The setting range is 0 to 127. The frequency becomes higher as the value increases.

11 PHASER - MIX

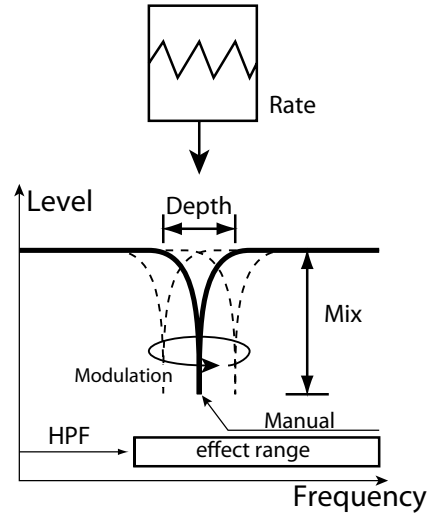
Adjusts the volume balance between the “dry” and the effect sound.

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.

12 PHASER - HPF

Controls the frequency range of the effect.

The setting range is 0 to 127. At 0 the effect is added to all frequencies. The effect is added to the higher frequencies as the value increases.



Flanger

This effect adds the sweeping “Jet Airplane” characteristic, adjustable from a mild shimmer to a deep “swoosh”.

▼EFF	EFFECT TYPE	▶
ON	Flanger	

6

▼EFF	RATE	DEP	RESO	▶
Flng	64	64	0	

7 8 9

▼EFF	DLAY	MIX	HPF	▶
Flng	0	64	64	

10 11 12

7 FLANGER - RATE

Adjusts the modulation speed.

The setting range is 0 to 127. The cycle becomes faster as the value increases.

8 FLANGER - DEPTH

Adjusts the depth of modulation.

The setting range is 0 to 127. The modulation becomes deeper as the value increases.

9 FLANGER - RESONANCE

Adjusts 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.

10 FLANGER - DELAY

Controls the delay of the effect sound.

The setting range is 0 to 127. The delay increases as the value is increased.

11 FLANGER - MIX

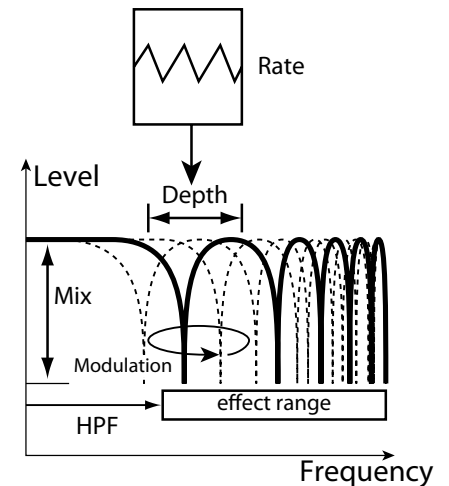
Adjusts the volume balance between the “dry” and the effect sound.

The setting range is 0 to 127. At 0, only the “dry” is heard. The effect level becomes greater as the value is increased. At 127 the ratio between the “dry” and the effect sounds becomes 1:1.

12 FLANGER - HPF

Controls the frequency range of the effect.

The setting range is 0 to 127. At 0 the effect is added to all frequencies. The effect is added to the higher frequencies as the value increases.



Chorus

This “Chorus” is NOT the same as Hammond’s proprietary “Chorus-Vibrato”. This effect is the familiar Chorus as heard widely on electric pianos, guitars, etc.

▼EFF	EFFECT TYPE	▶
ON	Chorus	

6

▼EFF	RATE	DEP	RESO	▶
Cho	◀ 64	64	0 ▶	

7 8 9

▼EFF	DLY	MIX	HPF	▶
Cho	◀ 0	64	64	

10 11 12

7 CHORUS - RATE

Adjusts the speed of the cycle of the rising and falling effect pitch.
The setting range is 0 to 127. The cycle becomes faster as the value increases.

8 CHORUS - DEPTH

Adjusts the depth of modulation.
The setting range is 0 to 127. The modulation becomes deeper as the value increases.

9 CHORUS - RESONANCE

Adjusts 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.

10 CHORUS - DELAY

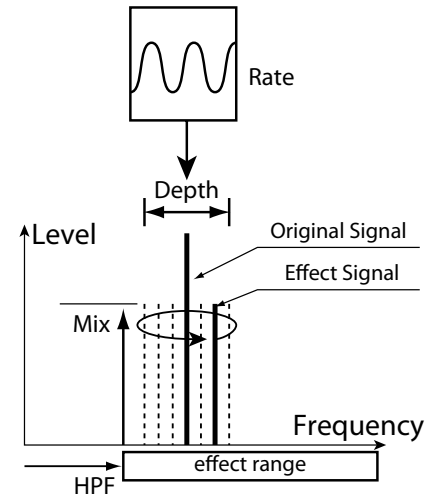
Controls the delay of the effect sound.
The setting range is 0 to 127. The delay becomes greater as the value increases.

11 CHORUS - MIX

Adjusts the volume balance between the “dry” and the effect sound.
The setting range is 0 to 127. At 0, only the “dry” is heard. The effect level becomes greater as the value increases. At 127 the ratio between the “dry” and the effect sounds becomes 1:1.

12 CHORUS - HPF

Controls the frequency range of the effect.
The setting range is 0 to 127. At 0, the effect is added to all frequencies. The effect is added to the higher frequencies as the value increases.



Delay

This is for adding echo effects.

▼EFF EFFECT TYPE
ON Delay ▶

6

▼EFF TYPE TIME F.B.
Delay MONO 1000 50 ▶

7

8

9

▼EFF MIX
Delay 64 ▶

10

7 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.

8 DELAY - TIME

Adjusts the delay time.

The setting range is 10 to 1000 ms.

9 DELAY - FEED-BACK

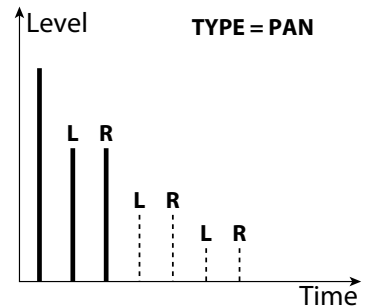
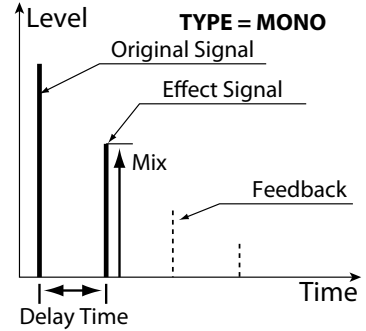
Sets the repetition amount of the effect sound.

The setting range is 0 to 127. The repetition becomes greater as the value is increased.

10 DELAY - MIX

Adjusts the volume balance between the "dry" and the effect sound.

The setting range is 0 to 127. At 0, only the "dry" is heard. The effect level becomes greater as the value is increased. At 64 the ratio between the "dry" and the effect sounds becomes 1:1. At 127 only the effect sound is heard.



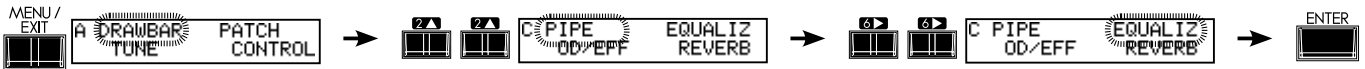
NOTE: All the parameters in these modes are Patch Parameters. They are recorded into the Patch.

EQUALIZ (Equalizer)

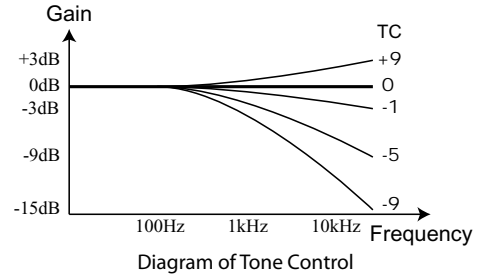
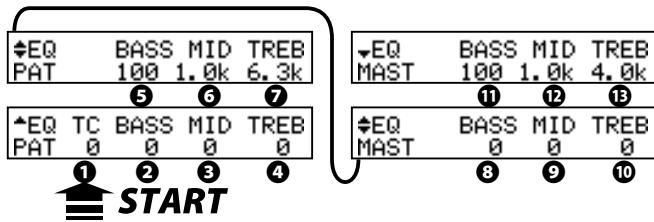
In this mode, you adjust the settings for the Equalizer.

An Equalizer is used to adjust the tonal quality. The XK-1C's built-in Equalizer consists of 3 bands and a recreation of the unique "tone" control that was part of the vintage B-3. The Bass and Treble bands are handled by "shelf" equalizers, and the Mid band is handled by parametric control.

To locate this mode:



See "Function mode" (P. 62) for operation details.



◆ PATCH EQUALIZER

① TONE CONTROL (P)

This is a simulated original B-3 TONE CONTROL. Its response is unique, but its basic response is to gently cut the overall treble above 200Hz.

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

◆ PATCH EQUALIZER and MASTER EQUALIZER

②, ⑧ GAIN - BASS (P), (G)

③, ⑨ GAIN - MIDDLE (P), (G)

④, ⑩ GAIN - TREBLE (P), (G)

Adjusts the Boost/Cut of Bass, Mid-range and Treble respectively.

The setting range is -9 to +9. It is flat at 0.

⑤, ⑪ FREQUENCY - BASS (P), (G)

⑥, ⑫ FREQUENCY - MIDDLE (P), (G)

⑦, ⑬ FREQUENCY - TREBLE (P), (G)

Adjusts 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.

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

NOTE: The parameter with (P) indicated is a patch parameter, and is recorded to each patch. (G) indicates "global parameter", which is recorded upon being set, and is common with each patch.

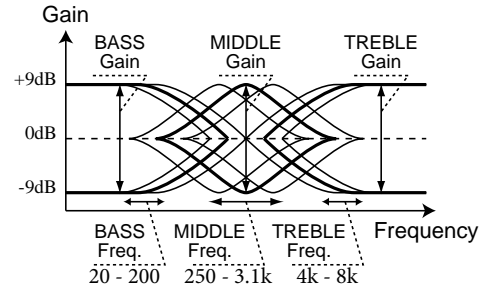


Diagram of 3-bands Equalizer

tips THE EFFECTIVE USE OF THE MIDDLE FREQUENCY

The frequency response of the horn rotor in the Leslie speaker is not flat. It has a peak from 1kHz to 3kHz. This peak is effective in "cutting through" any ensemble playing.

If you use this organ through line out without a Leslie speaker, you can duplicate effect by setting the FREQUENCY- MIDDLE to approximately 2kHz, and the GAIN - MIDDLE to "+".

tips TURNOVER FREQUENCY

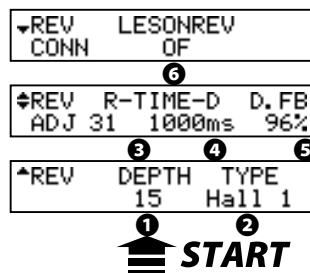
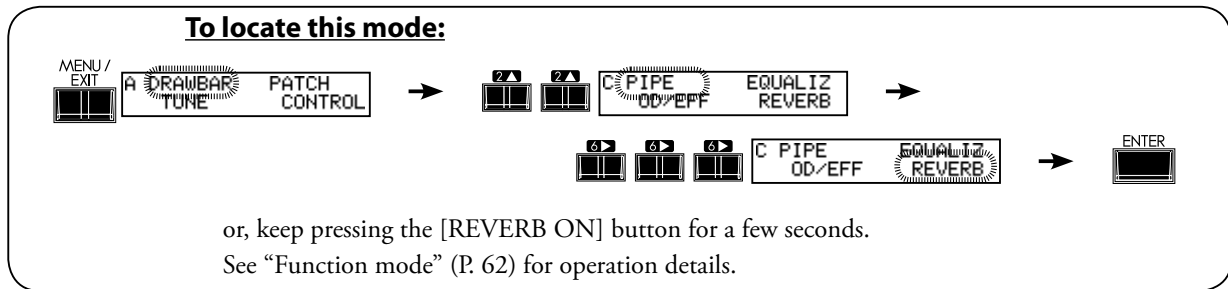
The MIDDLE of this equalizer controls a point of frequency. This is called center frequency. The BASS (or TREBLE) controls lower (or higher) than specified frequency. This is called turnover frequency.

tips PATCH PARAMETERS

The equalizer is designed to be a patch parameter to be actively utilized as a part of sound making parameter.

Use the Master Equalizer for tonal compensation to match the performance stage.

In this mode, you set the Reverb effect.



1 DEPTH

This sets the depth (volume) of the Reverb Effect.
The setting range is 0 to 127.

2 TYPE

This sets the types of Reverb effect.

- 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

3 REVERB TIME

When the Type (#2) is set at Room 1 to Spring, The decay of the Reverb is attenuated.
The setting range is 0 to 127. The decay becomes greater as the value is increased.

4 DELAY TIME

When the Type (#2) is set at Delay, PanDly, RevDly, this parameter sets the delay time.
The setting range is 4.7 to 2000ms. The delay becomes longer as the number value is increased.

NOTE: You can set the delay time with the foot switch. (P. 72 #2)

5 DELAY FEEDBACK

When the Type (#2) is at Delay, PanDly, RevDly, it sets the amount of Feedback (How many times the sound repeats.)

The setting range is 0 to 96%. The repetition becomes greater as the value is increased.

NOTE: Type (#2) is a macro-parameter. When you change the type, each reverb parameter (#3 to #5) is automatically set to the recommend value.

6 LESLIE ON REVERB

This sets the routing of the Reverb effect.

- OFF:** Leslie to Reverb
- ON:** Reverb to Leslie

tips LESLIE ON REVERB

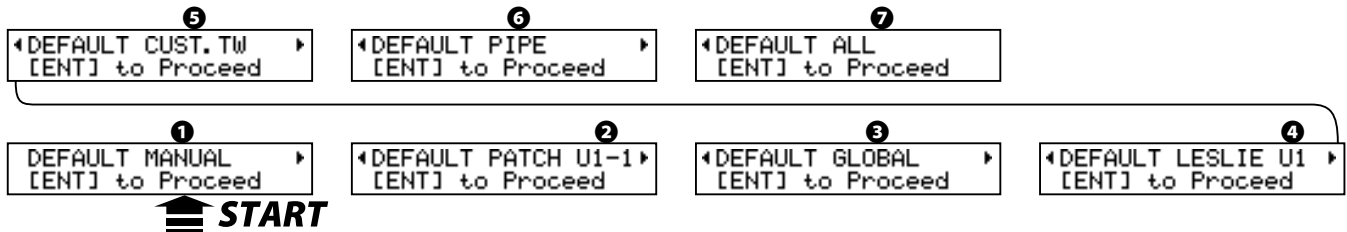
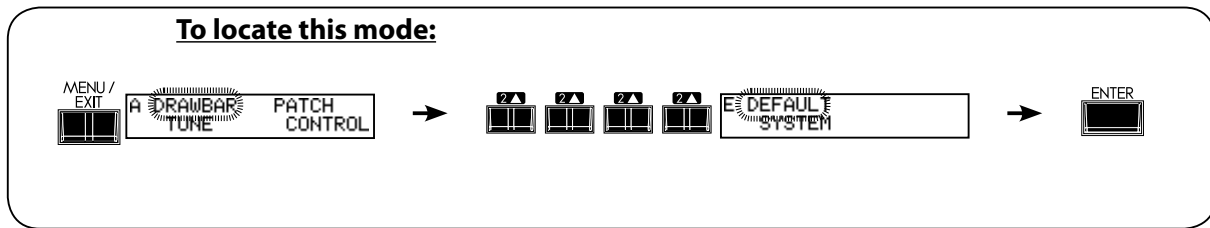
In the past when there are no electronic Leslie effect, the sound sent to the Leslie speaker with reverb effect. It made a sound which rotated reverb too.

The Leslie On Reverb simulates that.

NOTE: All the parameters in these modes are Patch Parameters. They are recorded into the Patch.

DEFAULT

In this mode, you can go back totally or partially to the factory default settings.



To initialize each parameter, select the parameter you want to initialize with the [**◀**]**[▶]** button and press the **[ENTER]** button.

1 MANUAL

This is for initializing the contents of the **[MANUAL]** button.
Used to create a “clean slate” for new Patch settings.

2 PATCH

This is for initializing the User Patch contents (from Preset Patch with same patch number). Select the Patch you want to initialize with the **[VALUE]** knob. The selecting range is U1-1 to U8-8 and ALL (All user patches).

3 GLOBAL

This is for initializing the Global Parameters such as the Master Tune or assignment of the Foot Switch.

4 LESLIE

This is for initializing the contents of all internal Leslie cabinets. Select the cabinet you want to initialize with the **[VALUE]** knob. The selecting range is U1 to U8 and ALL (All User cabinets).

5 CUSTOM TONE-WHEELS

This is for initializing the contents of all custom Tone-Wheels.

6 PIPE

This is for initializing the Pipe parameters.

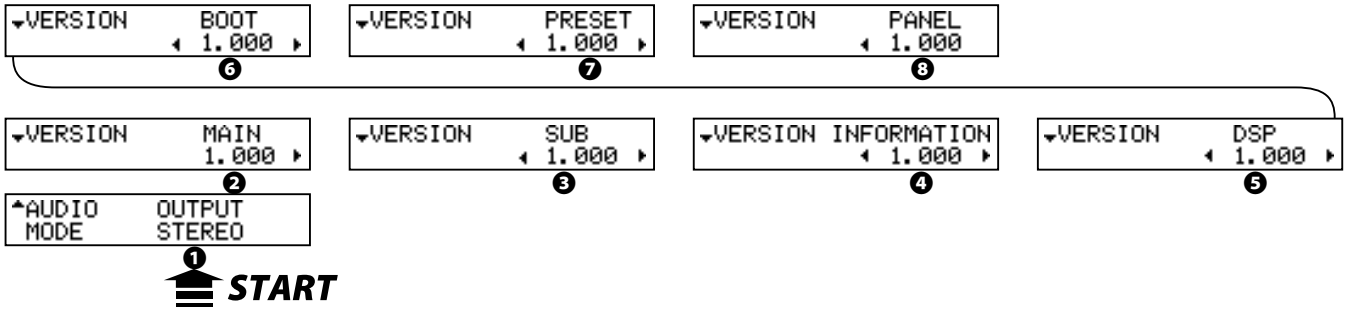
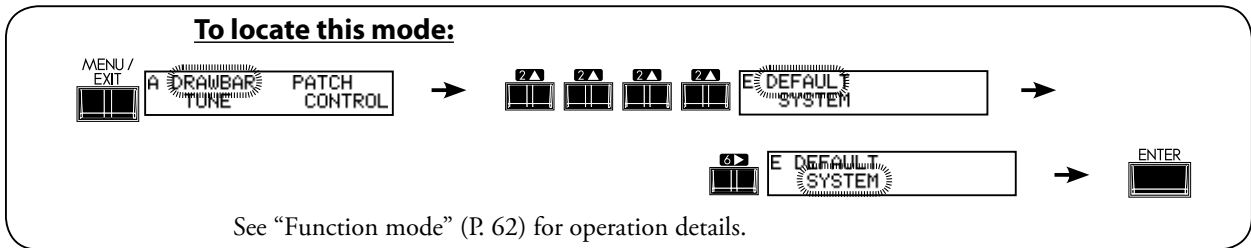
7 ALL

This is for initializing all parameters of this keyboard.

If any unstable condition occurs on this keyboard system, initializing “all” will usually clear the problem.

NOTE: You can also totally initialize this keyboard by switching the power ON while pressing and holding the **[RECORD]** button.

In this mode, the audio output mode and the System information of the XK-1C is displayed.



1 AUDIO MODE - OUTPUT

Sets the audio mode of output jacks.

STEREO

Use when this keyboard is connected in stereo. You can get the maximum stereophonic sound effects.

MONO

Use when this keyboard is connected in mono. Though it makes no stereophonic sound effects, it avoids "drop out" by sounding opposite channel.

2 VERSION - MAIN PROGRAM

3 VERSION - SUB PROGRAM

4 VERSION - VOICE INFORMATION

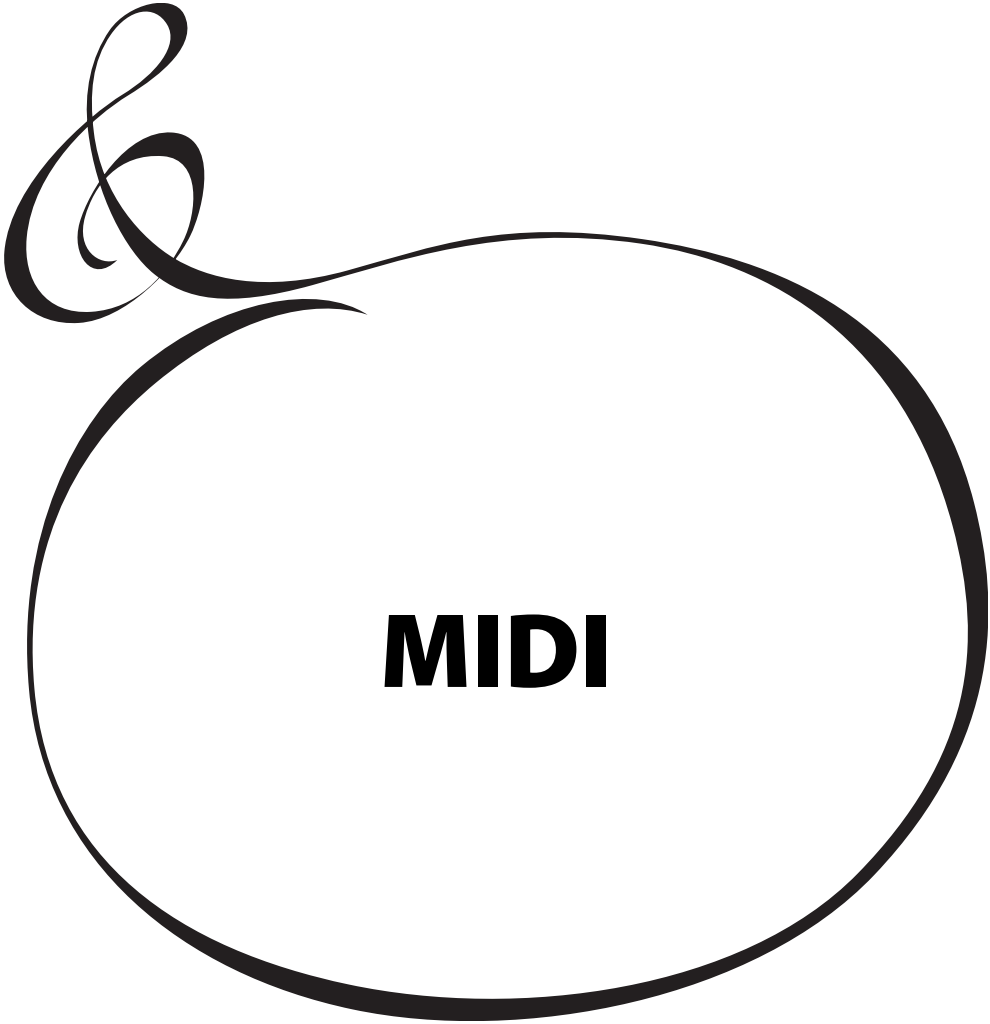
5 VERSION - D. S. P.

6 VERSION - BOOTSTRAP PROGRAM

7 VERSION - FACTORY PRESET

8 VERSION - CONTROL PANEL

These are display only and not intended for System update use.



WHAT IS “MIDI”?

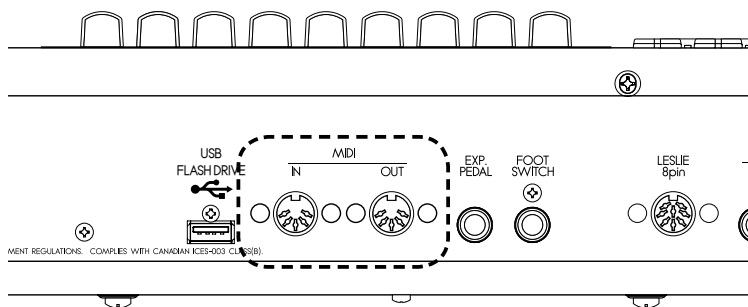
MIDI is an acronym of ‘Musical Instrument Digital Interface’.

MIDI is the musical instrument industry standard for exchanging performance information between electronic musical instruments and a sequencer, effects, lighting, and sound reinforcement gear, etc.

The MIDI standard allows instruments made by different manufacturers to effectively communicate with each other.

Many types of data can be transmitted and received, including all performance information, settings of parameters, and global commands.

MIDI JACKS ON THIS KEYBOARD



MIDI OUT JACK

This sends performance information to an external MIDI sound module, or to record performances and controls to an external sequencer.

MIDI IN JACK

This jack is used for playing this keyboard from external MIDI equipment.

WHAT THE MIDI CAN DO ON THIS KEYBOARD

On this keyboard, the MIDI terminals are intended to do the following:

- ♦ Use a MIDI keyboard/pedalboard 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, this keyboard is equipped with “MIDI Templates”.

MIDI CHANNEL

MIDI has 16 “Channels”. All channels transmitted through one MIDI cable.

The channel must match between the sender and the receiver. If not, the machines can not “hear” what the other “says”.

MAIN MIDI MESSAGE

The MIDI information is grouped into a channel message per each of the 16 channels and a system message for all channels. There are more details in the MIDI IMPLEMENTATION CHART.

CHANNEL MESSAGE

◆NOTE ON

This data tells: which key (Note Number) is played, at what speed (Velocity) and the strike/release (Note On/Off).

◆PROGRAM CHANGE

Control Channel:

Switches the internal patches of this keyboard.

External Zone Channel:

Switches the external MIDI equipment's patches.

◆CONTROL CHANGE

The messages are transmitted (sent or received) in accordance with the motion of select controls on the top panel, any foot or auxiliary pedals, or any MIDI controller information.

SYSTEM MESSAGE

◆SYSTEM EXCLUSIVE MESSAGE

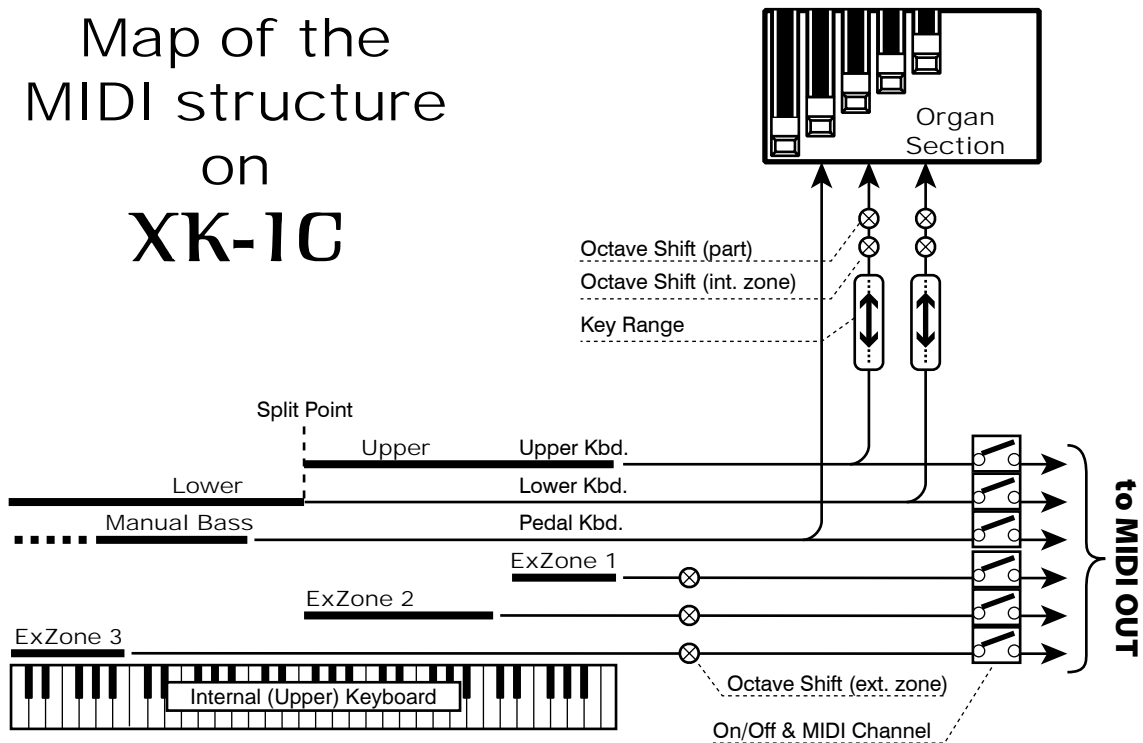
This message is for transmitting the particular data between compatible equipment of the same model or same make.

This keyboard can do a memory dump (= sending the total information compliment onboard) and recording it to an external sequencer.

MIDI STRUCTURE

This keyboard has “Keyboard Channels” to transmit playing information of the keyboards and “External Zone Channels” to control external MIDI equipment on the keyboards.

Map of the MIDI structure on XK-1C



◆ KEYBOARD CHANNELS

The Keyboard channels transmit the playing information of the Upper, Lower and Pedal parts. These are used to exchange playing information with an external sequencer.

The Upper channel transmits keyboard and controller data.

◆ EXTERNAL ZONE CHANNELS

The External Zone channels are for using this keyboard as a simple master keyboard to control the external MIDI equipment. These are Patch parameters, and it is possible to make different settings to each Patch.

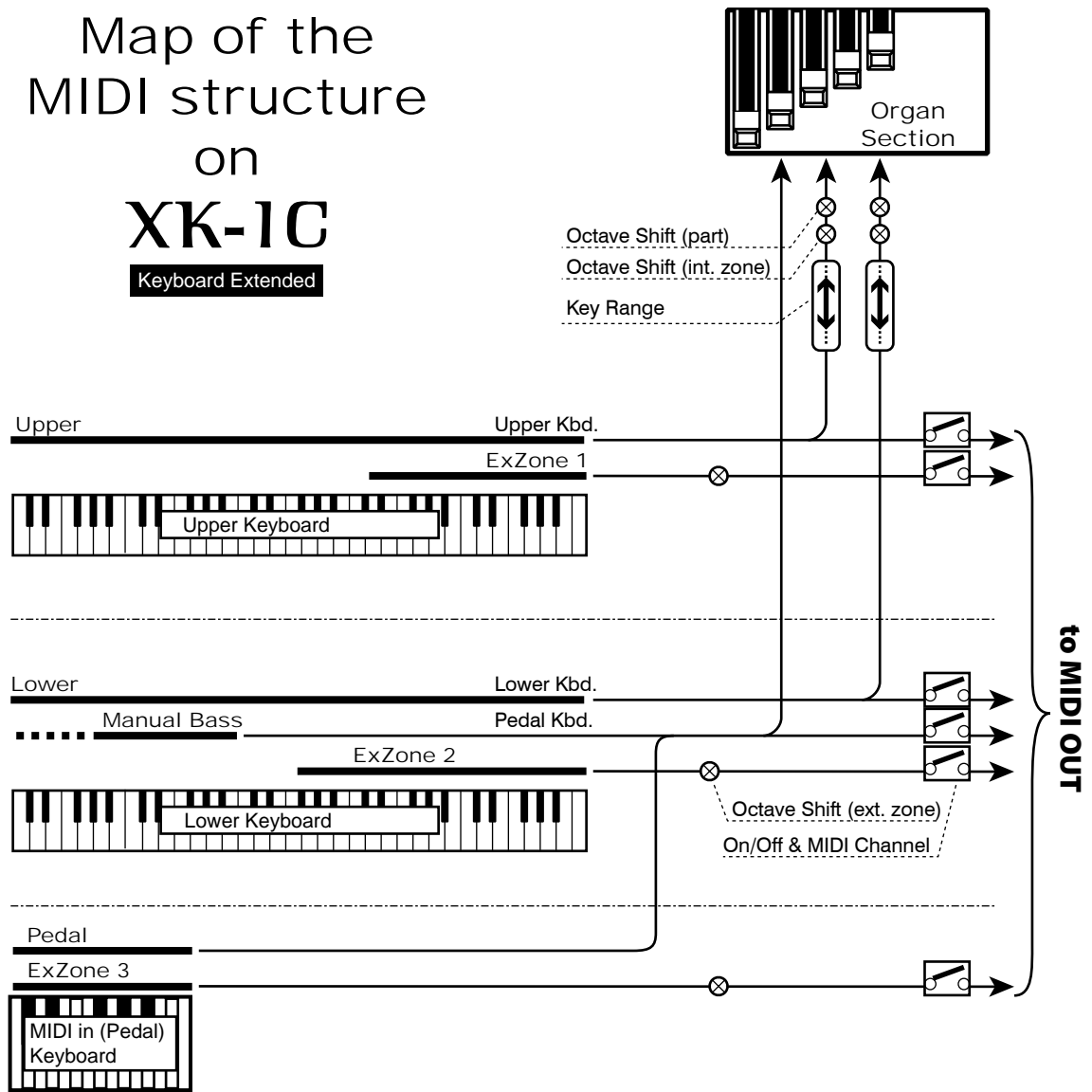
There are 3 external zones in total. Each can be allocated to the desired keyboards (for example, 3 zones for the Upper keyboard or 1 each for the U/L/P keyboards).

◆ EXPANDED KEYBOARDS

When a MIDI keyboard is used to expand the Lower and Pedal parts, they behave as if the built-in keyboard on the keyboard, and, not only sounds the built-in sound generator, but also are transmitted through the MIDI OUT jack to the keyboard channels as well as transmitted to the external zones.

Map of the MIDI structure on XK-1C

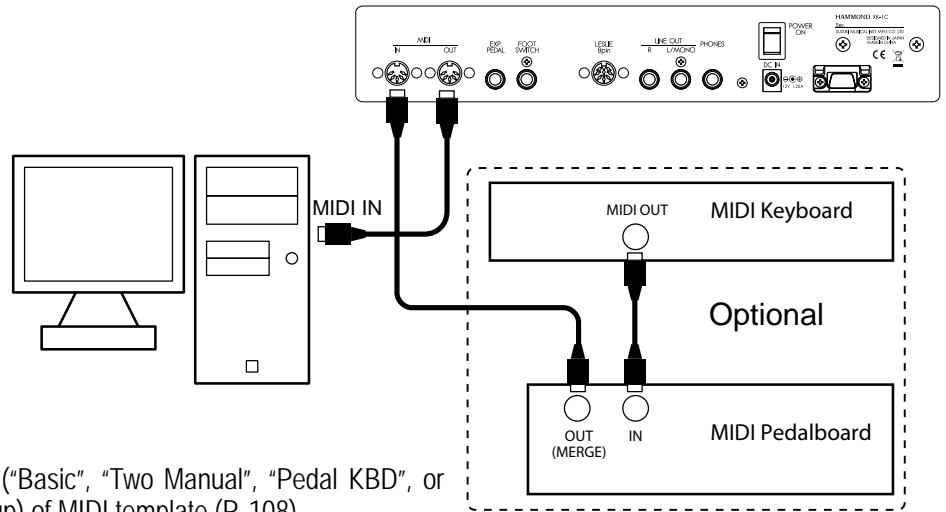
Keyboard Extended



USING AN EXTERNAL SEQUENCER

This is to record/playback the performance by connecting an external sequencer or computer to this keyboard.

◆ Recording a organ performance to an Sequencer/DAW



1. Connect as illustrated above.
2. Call the others than the "Use Ex." ("Basic", "Two Manual", "Pedal KBD", or "3KBD" depending on your hooked up) of MIDI template (P. 108)

This hookup is only for recording/playing the XK-1C by itself, not External Zones.*1.

3. Set the MIDI channel of the Sequencer/DAW.

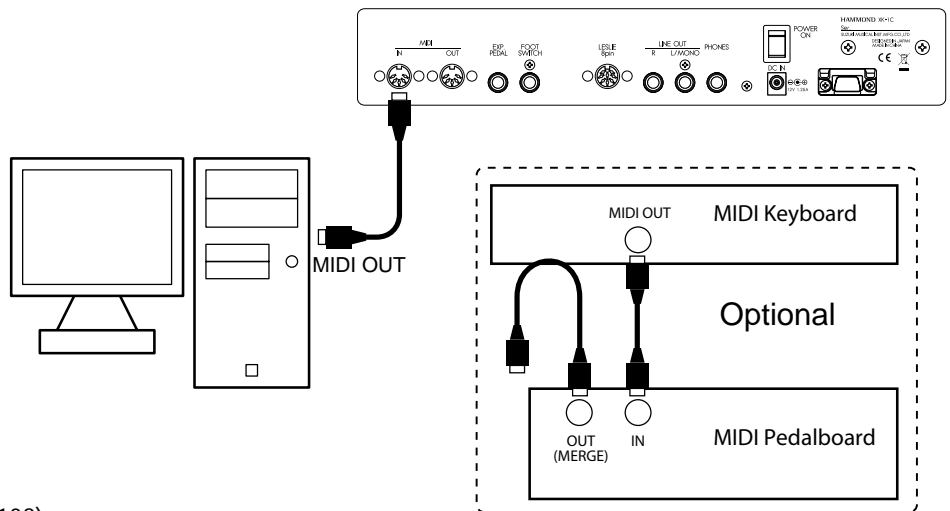
If only using UPPER, set Sequencer/DAW to record channel 1. If using all three parts, Allow 3 channels in your sequencer/DAW for recording. Channel 1 for UPPER, Channel 2 for LOWER, Channel 3 for PEDAL.

4. Start recording on the Sequencer/DAW.
5. If necessary, send the memory dump.
6. Start playing.

*1 To record the control of External Zones, addition of above illustration, connect MIDI IN of controlled MIDI equipment to MIDI OUT of external sequencer, and set Echo ON the external sequencer.

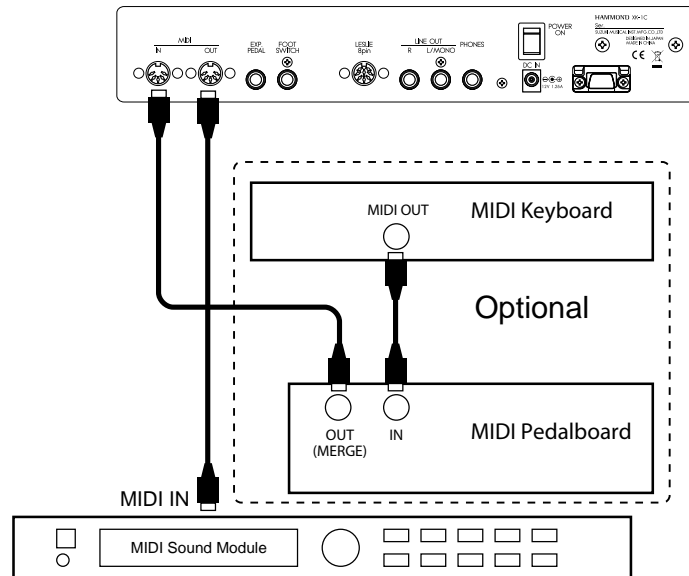
When the playback, connect the MIDI OUT of external sequencer to MIDI IN of controlled MIDI equipment instead of this keyboard.

◆ Sequencer playback



1. Connect as illustrated.
2. Call the MIDI template "Basic". (P. 108)
3. Start playing on the Sequencer/DAW.

You can control an external MIDI sound module with the built-in keyboard and the expanded MIDI keyboard.



1. Connect as illustrated.

Connect the MIDI OUT of this keyboard to the MIDI IN of the MIDI sound module.

2. Call the MIDI template "Use Ex. xxx". (P. 108)

By this, the External Zone performance is sent from the MIDI OUT instead of Keyboard channels.

Use different MIDI templates, depending whether the keyboard is expanded or not.

3. Set each zone, and, if necessary, record to the patches.

See the next paragraph "ZONES" for the setting details.

tips WHY USING EXTERNAL ZONES

This keyboard's default MIDI channels are Upper 1 / Lower 2 / Pedal 3, but using these assignments to control external sources can get tricky.

The External Zone is a solution. Each has a provision for a program number, octave, velocity sensitivity and so on by each Patch separate from the organ assignments.

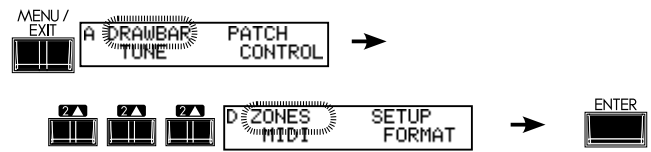
ZONES

To control external MIDI equipment, ranges on the keyboard of this instrument are assigned. They are called “External Zones”.

The range of the built-in sound engine on this keyboard (called “Internal Zone”) is set at the same time. You can use each separately on a single manual keyboard.

Each MIDI keyboard connected to the MIDI IN jack can control the external MIDI equipment with the external zone.

To locate this mode:



See “Function mode” (P. 62) for operation details.

↙XZ3 SWITCH CHANNEL
CHAN OFF 3 ▶

↙XZ3 ALLOC LO--HI
KYBD PEDAL 1C 6C ▶

↙XZ3 M-BNK-L PROG
PROG 0 0 1 ▶

↙XZ3 OCT VOL PAN VEL
NOTE +0 100 -C- 1 ▶

↕XZ2 SWITCH CHANNEL
CHAN OFF 2 ▶

↕XZ2 ALLOC LO--HI
KYBD LOWER 1C 6C ▶

↕XZ2 M-BNK-L PROG
PROG 0 0 1 ▶

↕XZ2 OCT VOL PAN VEL
NOTE +0 100 -C- 1 ▶

↕XZ1 SWITCH CHANNEL
CHAN OFF 1 ▶

↕XZ1 ALLOC LO--HI
KYBD UPPER 1C 6C ▶

↕XZ1 M-BNK-L PROG
PROG 0 0 1 ▶

↕XZ1 OCT VOL PAN VEL
NOTE +0 100 -C- 1 ▶

↕INT MAN. BASS SPLIT
KYBD LOW 2B 2B ▶

↕INT UPPER LOWER
OCTAVE +0 S+0 R+0 ▶

START

◆ WHAT IS DISPLAYED ON THE UPPER LEFT?

On the upper left of the Zone mode, the Zone to be operated now is displayed.

INT: Internal zone

XZn: External zone (#n)

◆ INTERNAL ZONE

① MANUAL BASS - MODE

This is for setting the how the Manual Bass (P. 30) works.

LOW: Sounds on lowest note if a chord is played.

CHRD: Sounds suitable bass note if a chord is played on Lower part.

POLY: Sounds the chord if a chord played.

② MANUAL BASS - LIMIT

Sets the upper limit note for the Manual Bass function.

③ SPLIT POINT

Sets the upper limit note for the Lower part when using the split function (P. 30).

④ OCTAVE - UPPER

Sets the octave of the Upper part.

⑤ OCTAVE - LOWER on SPLIT

This is for setting the octave of the Lower part. This parameter works on split Lower division of built-in keyboard.

⑥ OCTAVE - LOWER on REAL

This is for setting the octave of the Lower part. This parameter works on expanded Lower keyboard.

◆ EXTERNAL ZONE

⑥ SWITCH

Sets whether or not to send the MIDI message in this zone.

⑦ MIDI CHANNEL

Sets the MIDI send channel 1 to 16 of this zone.

⑧ KEYBOARD ALLOCATE

Sets which keyboard to allocate this zone.

Set to the UPPER if it is only the XK-1C.

If there is an expanded keyboard, you can control the external zone using the Lower keyboard or the Pedalboard. If applicable, set to LOWER or PEDAL.

Set at OFF if an external synthesizer is connected, to change the Program or volume only, without sending the note (playing) messages.

⑨ ZONE - LOW

⑩ ZONE - HIGH

Sets the keyboard range for playing this zone.

Set the lower limit with LO and the upper limit with HI.

NOTE: 9 and 10 can also be set by pressing the [RECORD] button with play the desired note on the keyboard.

⑪ PROGRAM - BANK MSB

⑫ PROGRAM - BANK LSB

⑬ PROGRAM - PROGRAM CHANGE

Sets Bank Select and the Program Change to send to this 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 owners 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.

⑭ NOTE - OCTAVE

Sets octave shift of this zone. If an external synthesizer sound in a different octave from that you desire, adjust this parameter.

The setting range is -2 to +2.

↙XZ3 MIN-MAX CC# EXP. ◀ 40 127 11:EXP ▶	↙XZ3 DAMPER MSGS ◀ ON
↕XZ2 MIN-MAX CC# EXP. ◀ 40 127 11:EXP ▶	↕XZ2 DAMPER MSGS ◀ ON
↕XZ1 MIN-MAX CC# EXP. ◀ 40 127 11:EXP ▶	↕XZ1 DAMPER MSGS ◀ ON
19 20 21	22

15 NOTE - VOLUME

Sets the volume (Control Change #7) of this zone. However, if CC# (20) is at "VOL", this setting value is null.

16 NOTE - PAN

Sets the Pan of this zone (Control Change #10).

17 NOTE - VELOCITY

Sets the character of the velocity to send to this zone.

The setting range is 0F and 1 to 4. At 0F, 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

Sets the range to "compress" the expression information to send to this zone.

In the XK-1C default, if the expression pedal is pulled fully back, the output does not perfectly silent. If a GM sound generator is used, the volume would go 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

Volume control differs by type by type of MIDI equipment connected. This parameter sets the proper CC# to control the volume / expression of connected MIDI equipment.

You can select 7: VOL, 11: EXP.

21 MESSAGE - DAMPER

Sets whether to send the damper information to this zone.

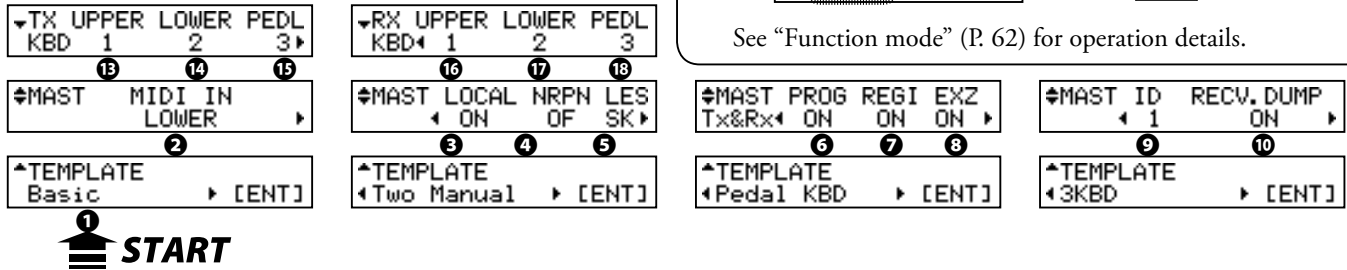
NOTE: The parameters in these modes are patch parameters, and are recorded to the patch.

PANIC FUNCTION AND PARAMETER RE-LOAD

If a problem occurs to the MIDI system, it may be caused by a cypher. When this keyboard and an external MIDI equipment is connected, such a problem could happen due to the difference between the setting contents of both equipment.

In such a case, touch both [▲], [▼] buttons. Both the "All Note Off" and "Reset All Controllers" are sent to the MIDI channels of all external zones (Panic Function), then the settings of all external zones are reloaded (sent again).

In this mode, you make the basic MIDI settings and the memory dump operation.



◆ MIDI TEMPLATE

① MIDI TEMPLATE

This mode allows common MIDI setups to be recalled.

By selecting the use with the [◀][▶] buttons and pressing the [ENTER] button, the typical settings are called.

See “MIDI TEMPLATE” in the Appendix (P. 122) for details of each MIDI template.

◆ MASTER

② MIDI IN

This is for switching the MIDI jack function.

LOWER

The received MIDI data sounds the LOWER part and are re-sent to the LOWER channel (#14) of the MIDI OUT jack, regardless of the settings of the MIDI channel.

The [SPLIT] button is ignored. Its keyboard works as UPPER.

PEDAL

The received MIDI data sounds the PEDAL part and are re-sent to the PEDAL channel (#15), regardless of the setting of the settings of the MIDI channel.

LOW + PED

The received MIDI data sounds the LOWER and the PEDAL parts in accordance with the MIDI channel settings and are re-sent to the LOWER (#14) and the PEDAL (#15) parts.

The [SPLIT] button is ignored. Its keyboard works as UPPER.

SEQUENCE

The received MIDI data sounds the UPPER, LOWER and PEDAL parts in accordance with the MIDI channel settings. They are not re-sent.

UPPER

The received MIDI data sounds the UPPER part and are re-sent to the UPPER channel (#13) of the MIDI OUT jack, regardless of the settings of the MIDI channel.

The [SPLIT] button is ignored. Its keyboard works as LOWER.

UPP + PED

The received MIDI data sounds the UPPER and the PEDAL parts in accordance with the MIDI channel settings and are re-sent to the UPPER (#14) and the PEDAL (#15) parts.

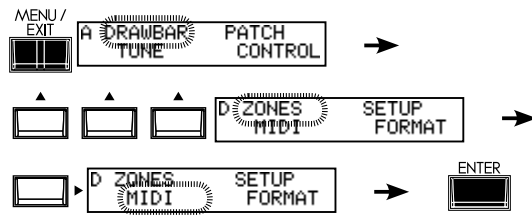
The [SPLIT] button is ignored. Its keyboard works as LOWER.

③ LOCAL

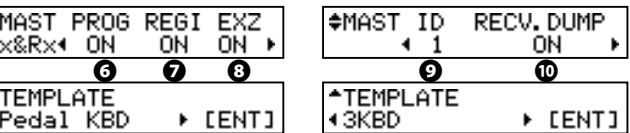
This switches the Local Control ON/OFF.

When switched ON, the keyboard(s) and the internal sound

To locate this mode:



See “Function mode” (P. 62) for operation details.



engine are connected. When OFF, the keyboard(s) and the sound engine are disconnected no sound is played.

You can use this keyboard as two different equipment; the MIDI keyboard and the sound module at the same time.

④ NRPN

This switches the NRPN (Non-Registered Parameter Number) ON/OFF.

On this keyboard it is used for transmitting the messages such as the Drawbar Fold Back or the Leslie ON. The NRPN is transmitted through the UPPER channel.

When switched ON, it is transmitted. When OFF, not transmitted.

⑤ LESLIE

This is for controlling how to send Leslie Parameters. The Leslie Parameters are sent on UPPER Channel.

XK:

The Leslie Parameters will be sent out on this keyboard original NRPN address and data.

21:

The Leslie Parameters will be sent out for Leslie 21 series NRPN address and data.

When the Cabinet Number is selected (i.e. by Patch), the parameters are sent out also.

NOTE: This parameter will change automatically when the Leslie speaker is connected / disconnected.

⑥ PROGRAM CHANGE

This switches the transmission of the program change ON/OFF. When ON, transmitted. When OFF, not transmitted.

⑦ DRAWBAR REGISTRATION

This switches the transmission of the Drawbar registration ON/OFF. When ON, transmitted. When OFF, not transmitted.

⑧ EXTERNAL ZONE

This switches the transmission of the external zones as a whole ON/OFF. When ON, transmitted. When OFF, not transmitted.

⑨ DEVICE ID

This sets the Device ID when transmitting the system exclusive messages such as the Memory Dump (#11, 12). The receiving

◀MAST TEMPORARY DUMP
 ◀[ENT] to Send▶

11

◀MAST ALL DUMP
 ◀[ENT] to Send▶

12

▲TEMPLATE
 ◀Use Ex. Zone ▶ [ENT]

▲TEMPLATE
 ◀Use Ex. w/2Man▶[ENT]

▲TEMPLATE
 ◀Use Ex. w/PK ▶[ENT]

▲TEMPLATE
 ◀Use Ex. w/3KBD▶[ENT]

is neglected, when the Device ID does not match, even if the messages for the same model.

10 RECEIVE DUMP

This switches reception of Memory Dump ON/OFF.

On this keyboard the total onboard memory can be transmitted as a Memory Dump, as system exclusive messages. To prevent reception of Memory Dump, select OFF.

11 TEMPORARY DUMP

Sends the Memory Dump.

When you press the [ENTER] button in this mode, the present settings (see tips) are sent as a whole from the MIDI OUT jack.

Recording a Temporary dump before you record a performance to an external sequencer, avoids setting mismatching upon sequencer playback.

12 ALL DUMP

Sends the Full Memory Dump.

Pressing the [ENTER] button in this mode, transmits all the settings through the MIDI OUT jack.

◆ KEYBOARD CHANNELS

Sets the MIDI channel to transmit at each part. The setting range is 1 to 16 and OF. At OF there is no transmission.

13 TX UPPER

Sets the MIDI channel for sending the UPPER part playing information, the control information, and that of the Leslie speaker.

14 TX LOWER

Sets the MIDI channel for sending the LOWER part playing information.

15 TX PEDAL

Sets the MIDI channel for sending the PEDAL part playing information.

16 RX UPPER

Sets the MIDI channel for receiving the UPPER part playing information, the control information, and that of the Leslie speaker.

17 RX LOWER

Sets the MIDI channel for receiving the LOWER part playing information.

18 RX PEDAL

Sets the MIDI channel for receiving the PEDAL part playing information.

❖ *To avoid confusion of MIDI signals, set each MIDI channel including the external zones (P. 106) to different numbers.*

NOTE: The settings in this mode are not recorded to the patches. They are recorded upon setting, and are common at all patches.

tips TEMPORARY DUMP CONTENTS

The patch parameters, global parameters and system parameters of the Temporary (= the present setting values) are transmitted.

The contents of each patch or that of the Leslie Cabinet are not transmitted. Use 'All Dump' for saving them.

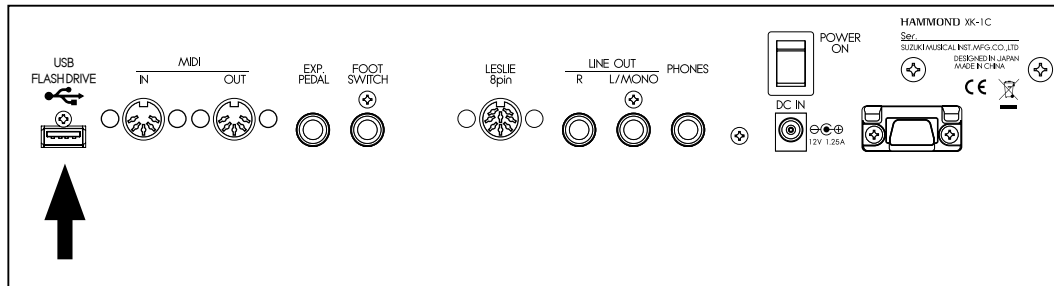
tips TO SAVE ALL

All the setting values of this keyboard are transmitted by 'All Dump'.



SAVE YOUR SETUP

A USB Flash drive connector is built in on this instrument. You can save the setting of each Parameter as a file to it.



WHAT YOU CAN DO WITH THE USB FLASH DRIVE

- ◆ Saving / Restoring the set-ups of this keyboard.
- ◆ Saving / Restoring a patch.
- ◆ the capacity of 1 set-up file is 32K bytes.
- ◆ 1 USB flash drive can save up to 99 set-up files.
- ◆ 1 USB flash drive can save up to 99 patch files, too.

ABOUT USB FLASH DRIVE

USABLE USB FLASH DRIVE

The USB Flash drives are various types, this keyboard does not covered at all. The rough estimate is 4GB or less, and formatted with FAT32. Consult our web site about compatible USB flash drives.

in Europe: <http://www.hammond.eu>

in The US: <http://www.hammondorganco.com>

USB CONNECTOR

1. Insert the USB flash drive facing the correct direction, matching the upper side of it to that of this keyboard.
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 USB flash drive is inserted to this organ, the following folders are automatically created on the drive.

1. "HAMMOND" - "XK-1C" in the root folder.
2. "SETUP", "SYSTEM" "PATCH" below it

SETUP

The setup files are saved here.

SYSTEM

Place the system files to update this keyboard here.

PATCH

The patch files are saved here.

NOTE: If your USB drive is formatted so the XK-1C cannot read it, the XK-1C will initialize your drive automatically. Do NOT use this USB drive for anything else than your XK-1C.

tips EXTENSION OF THE SETUP FILE

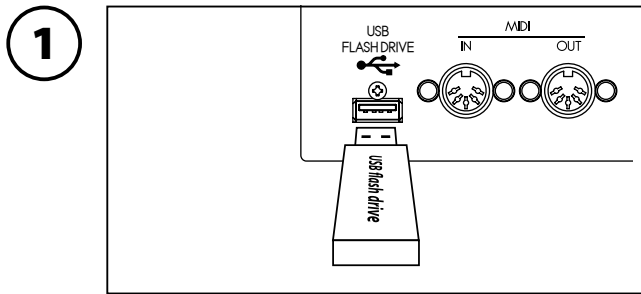
The extension "SET" is automatically given to the setup file treated on this keyboard.

tips EXTENSION OF THE PATCH FILE

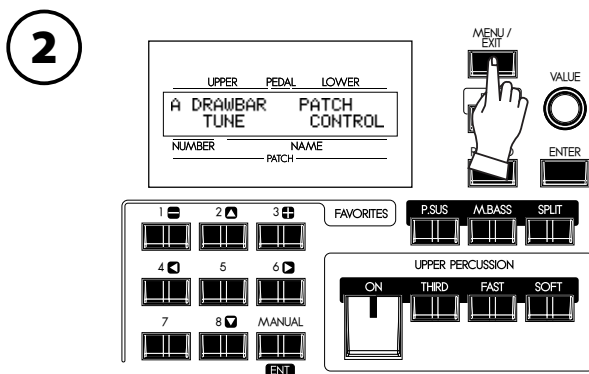
The extension "PAT" is automatically given to the patch file treated on this keyboard.

A “fresh” The USB flash drive must be “initialized”. The initializing procedure is as follows:

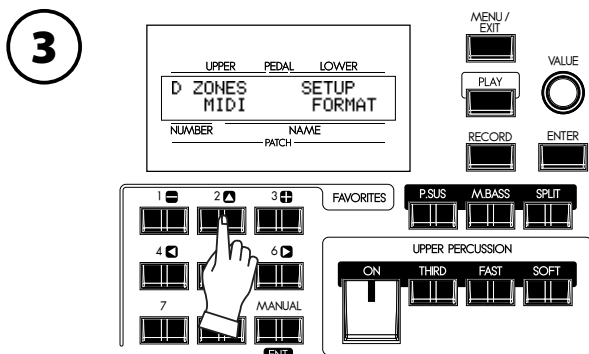
❖ When initializing is completed, all the contents of the USB flash drive are erased.



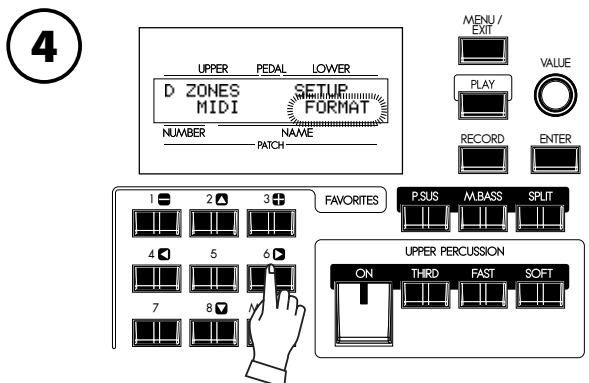
Insert the USB flash drive to the USB FLASH DRIVE jack.
Wait until the display “Confirming USB. Please wait...” disappears.



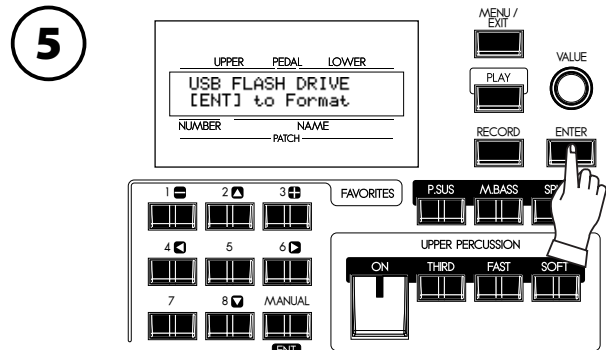
Press the [MENU/EXIT] button to display the Menu.



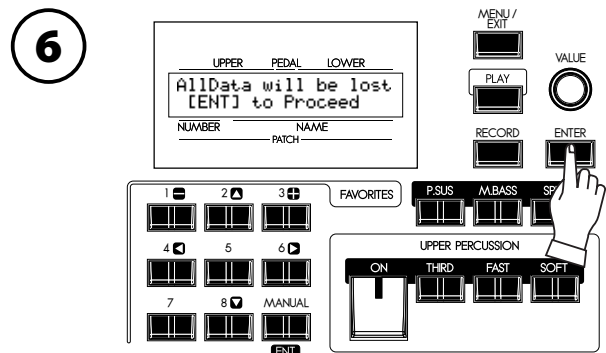
Select Page D with the [▲],[▼] buttons.



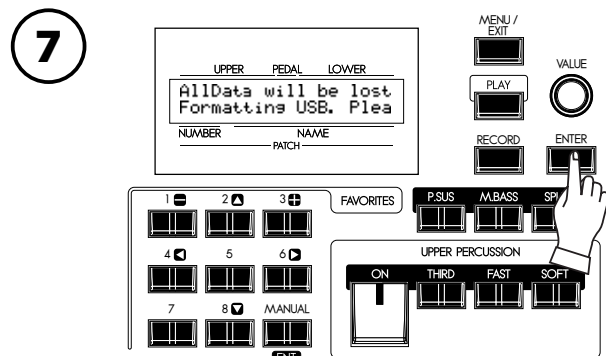
Select the “FORMAT” with the [▶] button.



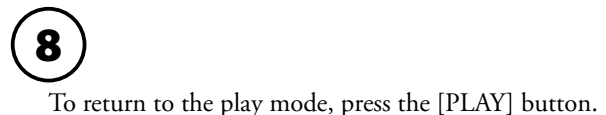
Press the [ENTER] button.
The FORMAT (=initializing) mode is displayed.



Press the [ENTER] button.
Confirmation message is displayed.



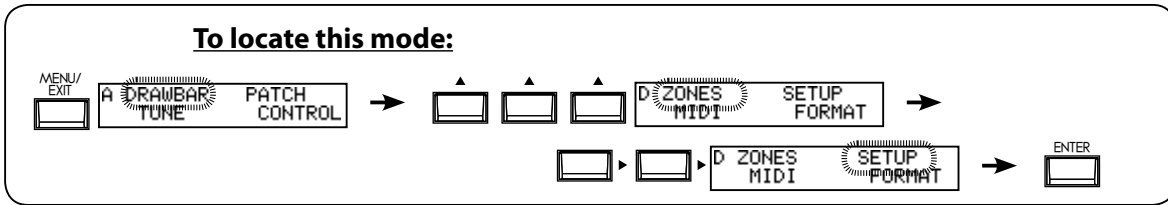
Press the [ENTER] button.
Initialization starts. It takes about 3 seconds.
NOTE: If you choose to not initialize, just press the [MENU/EXIT] button.



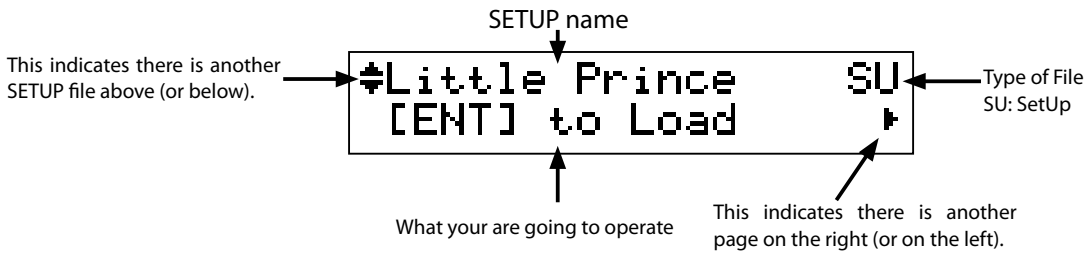
To return to the play mode, press the [PLAY] button.

SETUP PROCEDURES

Save or Load the SET-UPS to/from the USB flash drive in the SETUP mode.



HOW TO READ THE DISPLAY



SAVE THE SETUP

1 Check that the USB flash drive is correctly inserted.

2 Locate the SETUP mode.

WHAT DOES THIS MEAN?

- USB is not ready.
- USB flash drive is not correctly inserted.

3 Select "New File" by pressing the [▲] button (or turning the [VALUE] knob) a few times.

4 Pressing the [ENTER] button executes the "Save".

5 A temporary name "SETUPxx" is automatically given to the saved setup file.

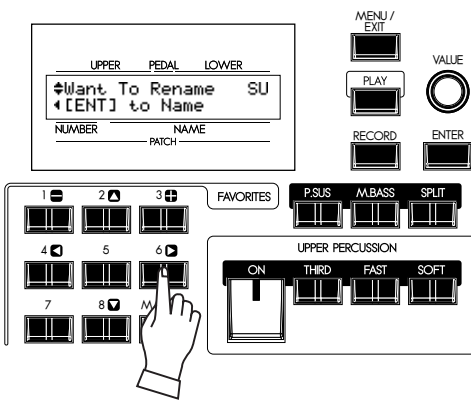
CHANGE THE SETUP NAME

1



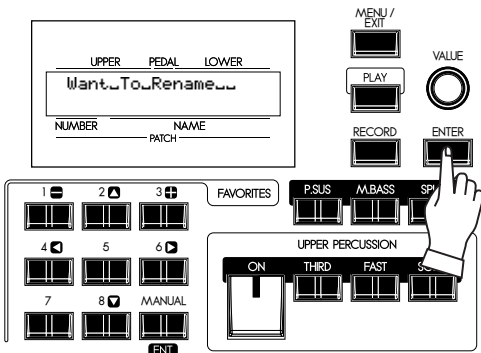
Select the setup file you want to change the name of with the [▲],[▼] buttons or the [VALUE] knob.

2



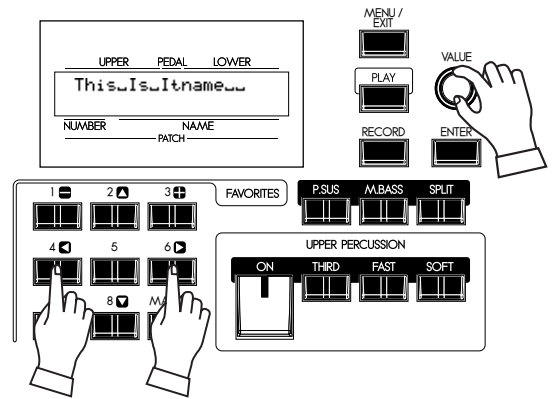
Press the [▶] button. "[ENT] to Name" is displayed.

3



Press the [ENTER] button. This is the screen where the name is entered.

4



Enter the new setup name.

[◀],[▶] buttons

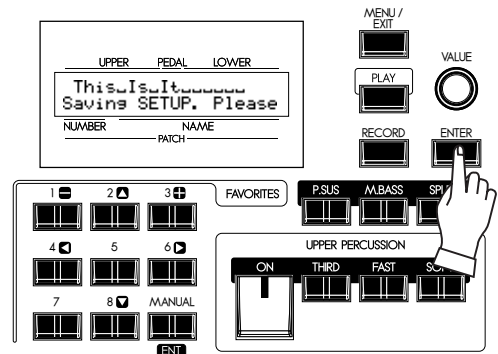
Move the cursor. The length is up to 16 letters.

[VALUE] knob

Select letters.

Valid characters are: digits, symbols, large and small alphabets.

5



Press the [ENTER] button. The setup name is changed.

tips WHAT CONTENTS ARE SAVED?

Setup: Global parameter, Patch parameter, Leslie Cabinet, Custom Tone Wheel, Temporary (except the Expression Source and Device ID).

LOAD THE SETUP

❖ If you do this operation, the settings in this keyboard are replaced with the newly loaded setups. You should save important data beforehand (p. 114).

1

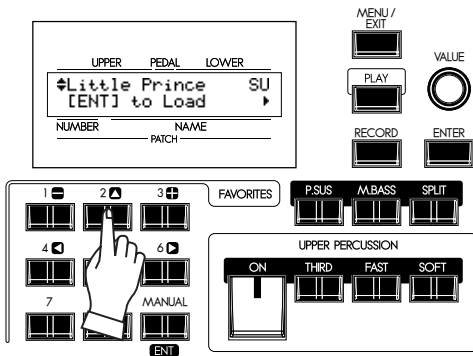
Check the USB flash drive is correctly inserted.

2



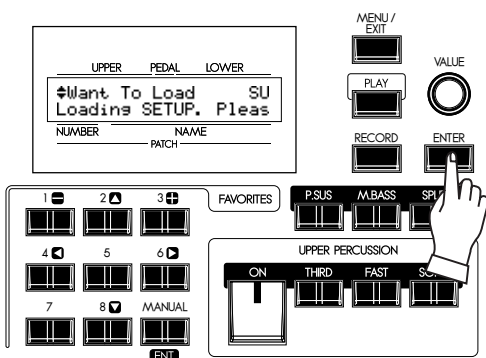
Locate the SETUP mode.

3



Select the Setup file to load with the [▲],[▼] buttons or the [VALUE] knob.

4



Press the [ENTER] button. The Setup is loaded.

DELETE THE SETUP

1

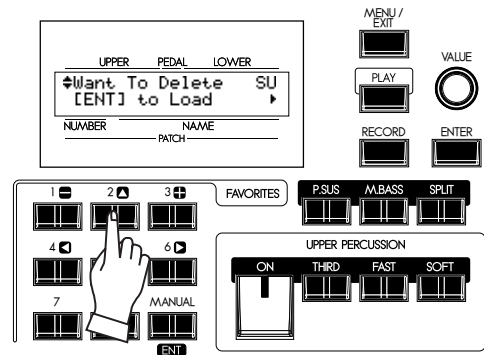
Check the USB flash drive is correctly inserted.

2



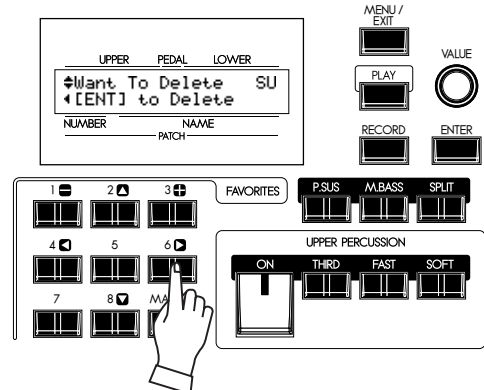
Locate the SETUP mode.

3



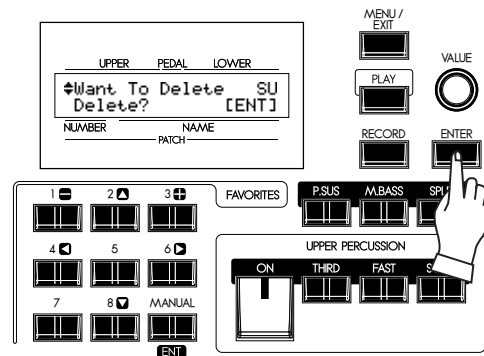
Select the setup file to delete with the [▲],[▼] buttons or the [VALUE] knob.

4



Press [▶] button twice. "[ENT] to Delete" is displayed.

5

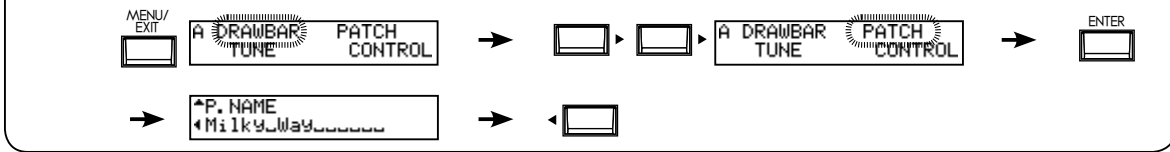


Press the [ENTER] button. "Delete?" is displayed. Now press the [ENTER] button again. The setup is deleted.

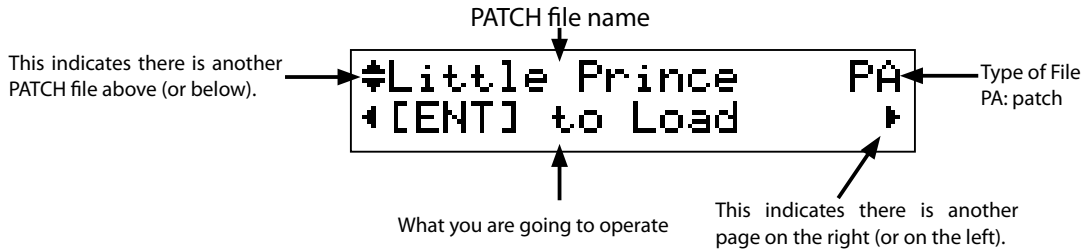
NOTE: If you do not wish to delete the setup, touch the [MENU/EXIT] button.

Save or Load the PATCHes to/from the USB flash drive in the PATCH mode, not SETUP mode on previous page.

To locate this mode:

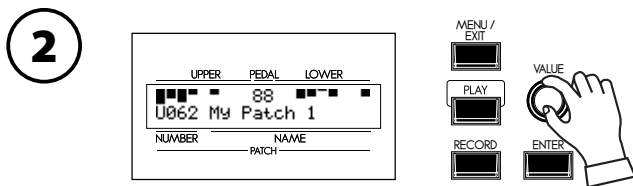


HOW TO READ THE DISPLAY



SAVE THE PATCH FILE

1 Check that the USB flash drive is correctly inserted.



Choose the Patch which you wish to save.

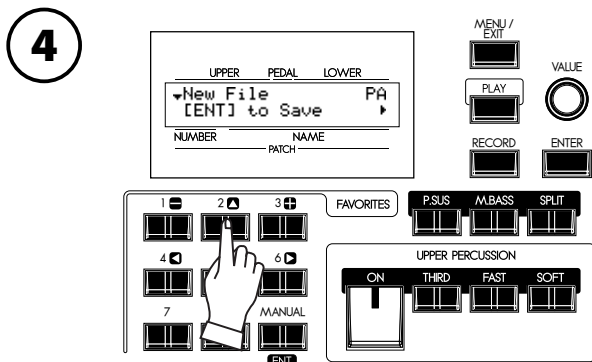


To locate the PATCH mode, please refer to the illustration above, "To locate this mode".

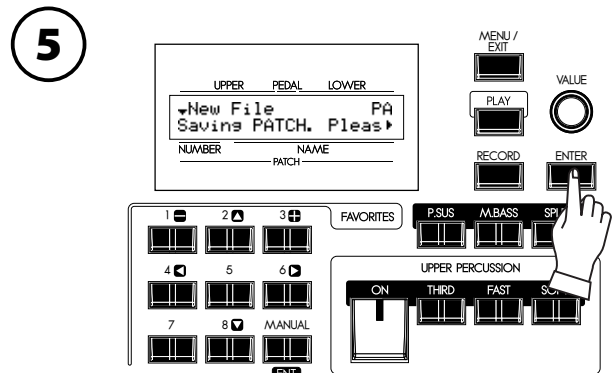
WHAT DOES THIS MEAN?

USB is not ready.

USB flash drive is not correctly inserted.



Select the "New File" by pressing the [▲] button (or turning the [VALUE] knob) a few times.



If you press the [ENTER] button, it is saved.

WHAT DOES THIS MEAN?

Same name exists.

There is a file with same name already. Change the patch name on the XK-1C, or delete the file with same name in the USB flash drive (next page).



A file name same as Patch name is automatically given to the saved patch file.

LOAD THE PATCH FILE

❖ If you do this operation, a patch in this keyboard are replaced with the newly loaded patch. You should save important data beforehand (p. 117).

1

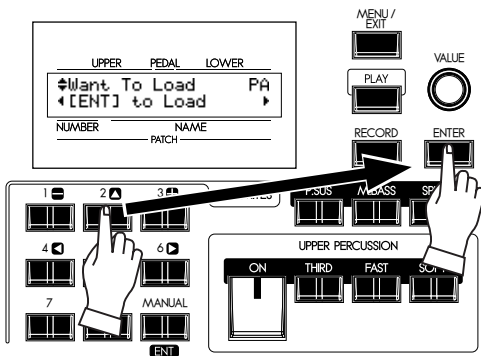
Check the USB flash drive is correctly inserted.

2



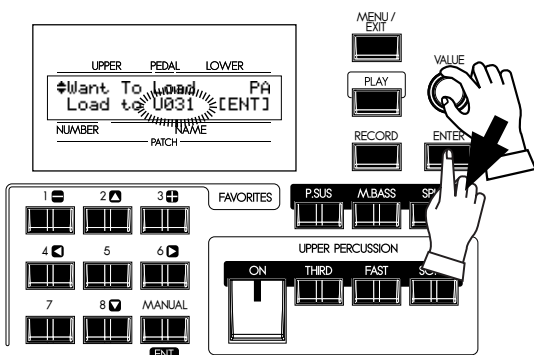
Locate the PATCH mode with refer to upper figure on last page.

3



Select the Patch file to load with the [▲],[▼] buttons or the [VALUE] knob, and press [ENTER].

4



Select the Patch number to be replaced.
Press the [ENTER] button. The Patch is loaded.

DELETE THE PATCH FILE

1

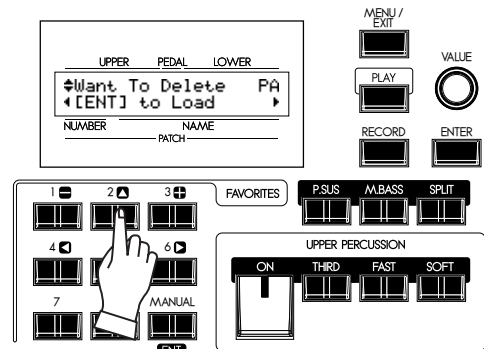
Check the USB flash drive is correctly inserted.

2



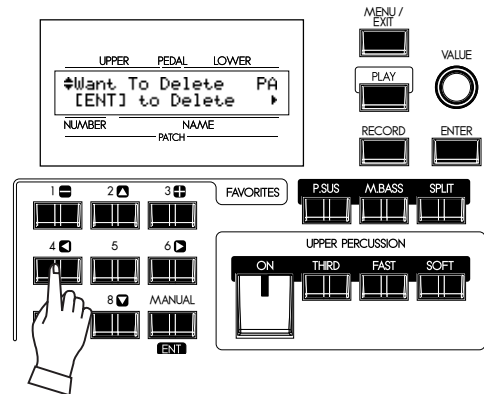
To locate the PATCH mode, please refer to the illustration or top of page 117.

3



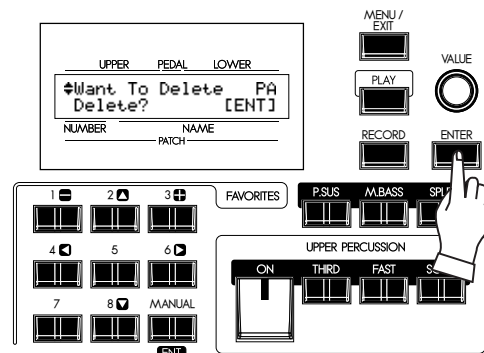
Select the Patch file to delete with the [▲],[▼] buttons or the [VALUE] knob.

4



Press [◀] button once. "[ENT] to Delete" is displayed.

5



Press the [ENTER] button. "Delete?" is displayed. Now press the [ENTER] button again. The Patch is deleted.

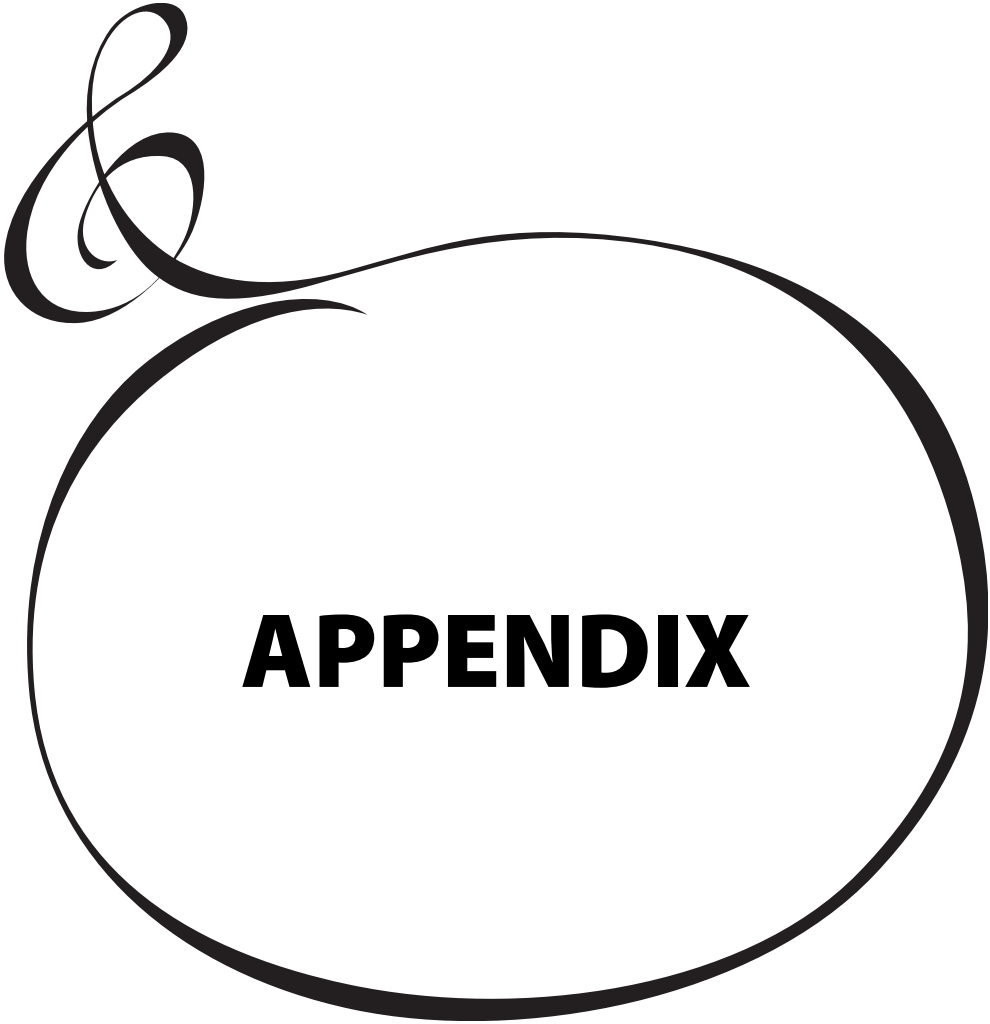
NOTE: If you do not wish to delete the setup, touch the [MENU/EXIT] button.



- ◆ **Malfunction of the buttons, the keys, etc.**
 - ◆ Turn off the POWER switch once, then turn it on again. If this procedure is not successful, turn off the POWER switch. While pressing the [RECORD] button, turn the POWER switch on again. (Note that in this case, all parameters return to their factory-preset status.)
- ◆ **No sound is produced when the keys are pressed.**
 - ◆ The MASTER VOLUME is at the minimum setting. ⇒
Adjust the volume with the MASTER VOLUME control.
 - ◆ The local control is turned OFF. ⇒
Turn the local control ON, if not using an external sequencer or computer. (P. 108 #3)
 - ◆ Leslie speaker is connected. ⇒
Line out and Phones jack does not output the sound of rotary channel when a Physical Leslie speaker is connected.
- ◆ **Cannot hear the some notes.**
 - ◆ Hooked-up with mono. ⇒
Set the audio mode at "MONO". (P. 97 #1)
- ◆ **The Manual Bass does not sound when the Split is turned off.**
 - ◆ The Manual Bass - Mode is set at "CHRD" (detecting chord on the LOWER part). ⇒
Set the mode at "LOW" or "POLY". (P. 106 #1)
- ◆ **The volume/expression does not change.**
 - ◆ The Expression Source assignment is not correctly set. ⇒
Correctly set the Expression Source item in the CONTROL mode. (P. 128)
 - ◆ The Expression mode of Overdrive is set at "OD Only" or "Input". ⇒
Set the Expression mode at except "OD Only" or "Input". (P. 86)
 - ◆ The Source of Multi-Effect is set at "EXP". ⇒
Set the Source at except "EXP". (P. 86)
- ◆ **The Foot switch does not work properly.**
 - ◆ The Foot Switch assignment is not correctly set. ⇒
Correctly set the Foot Switch in the CONTROL mode. (P. 72)
- ◆ **No functions the Split or Manual Bass.**
 - ◆ MIDI IN mode is set at "LOWER", "LOW+PED", "UPPER" or "UPP+PED". ⇒
Set the MIDI IN mode depending on the purpose. (P. 108 #2)
- ◆ **The Manual Bass Does not sound.**
 - ◆ The Foot Switch assignment is set at "MANUAL BASS". ⇒
Press the Foot Switch or set the Foot Switch assignment at except "MANUAL BASS". (P. 72)
- ◆ **When the patch is called, the sound is interrupted.**

If the following values are different between the patches, there will be a brief interruption:

 - ◆ Organ type
 - ◆ Multi-Effects
 - ◆ Octave
 - ◆ Split
 - ◆ Manual Bass
 - ◆ Key Range



APPENDIX

MIDI TEMPLATES

MIDI TEMPLATES

Template		Basic	Two Manual	Pedal KBD
Messages	MIDI IN	Sequence	Lower	Pedal
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	1	1
	Tx. Lower	2	2	2
	Tx. Pedal	3	3	3
	Rx. Upper	1	1 (disregarded, off)	1 (disregarded, off)
	Rx. Lower	2	2 (disregarded, omni)	2 (disregarded, off)
	Rx. Pedal	3	3 (disregarded, off)	3 (disregarded, omni)
	External Zone	Off	Off	Off
Comments	Use this template to record/play the performance only on this unit with the external sequencer.		Use this template to play the LOWER keyboard connecting to the MIDI IN jack.	Use this template to play the PEDAL keyboard connecting to the MIDI IN jack.

Template		3KBD	Use Ex. Zone	Use Ex. w/2Man
Messages	MIDI IN	Low + Ped	Sequence	Lower
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	Off	Off
	Tx. Lower	2	Off	Off
	Tx. Pedal	3	Off	Off
	Rx. Upper	1	1	1 (disregarded, off)
	Rx. Lower	2	2	2 (disregarded, omni)
	Rx. Pedal	3	3	3 (disregarded, off)
	External Zone	Off	On	On
Comments	Use this template to play the LOWER and PEDAL keyboards merging and connecting to the MIDI IN jack.	Use this template to play only this keyboard and control the MIDI equipment connected to the MIDI OUT jack with the External Zones.	Use this template to play this keyboard and the LOWER keyboard connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.	

Template		Use Ex. w/PK	Use Ex. w/3KBD	
Messages	MIDI IN	Pedal	Low + Ped	
	Local Control	On	On	
	NRPN	On	On	
	Program Change	On	On	
	Drawbar Registration	On	On	
Transmit Channel	Tx. Upper	Off	Off	
	Tx. Lower	Off	Off	
	Tx. Pedal	Off	Off	
	Rx. Upper	1 (disregarded, off)	1	
	Rx. Lower	2 (disregarded, off)	2	
	Rx. Pedal	3 (disregarded, omni)	3	
	External Zone	On	On	
Comments	Use this template to play this keyboard and the Pedal keyboard connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.	Use this template to play the merged LOWER and PEDAL keyboards connecting to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.		

PRESET PATCH LIST

Category	#	Name
High Lights	P1-1	Vintage B-3
	P1-2	Purple Smoke
	P1-3	SQUABBLE
	P1-4	Open The Doors
	P1-5	ChurchPipeOrgan
	P1-6	Drawbars Dimed
	P1-7	Vintage BV 31H
	P1-8	RetroLounge B-3
Rock / Pop A	P2-1	Full Gospel new
	P2-2	Model A & PR-40
	P2-3	Total Praise
	P2-4	Vintage Mellow
	P2-5	Vintage BV2 31H
	P2-6	VntFctPrstB3 A
	P2-7	Ball Park B-2
	P2-8	Oblivion XPRESS
Rock / Pop B	P3-1	Question 96
	P3-2	White Shade
	P3-3	The Gnome
	P3-4	Some Lovin'
	P3-5	Hint of WAH
	P3-6	In ThGardnOfEden
	P3-7	Rock B-3
	P3-8	Basic-B LH Bass
Jazz A	P4-1	Jimmy's #1
	P4-2	One Foot Preset
	P4-3	Vintage JAZZ
	P4-4	The LowerManual
	P4-5	Full Swing
	P4-6	Mighty Burner
	P4-7	Groove Richard
	P4-8	Five Spot
Jazz B	P5-1	Mr Hammonds Drm
	P5-2	Soap Opera
	P5-3	Walter's Summer
	P5-4	Sweet Ballad
	P5-5	Onions!!
	P5-6	Soul Lead & Pad
	P5-7	Comping Manual
	P5-8	All About MrMcG

Category	#	Name
Gospel	P6-1	Classic Gospel
	P6-2	Slow Gospel
	P6-3	Contemp.Gospel
	P6-4	Shout Gospel
	P6-5	Quiet Praise
	P6-6	Reflectiv Praise
	P6-7	Dramatic Praise
	P6-8	Quiet Prayer
Original Vintage Factory B-3 Presets	P7-1	VntFctPrstB3 C#
	P7-2	VntFctPrstB3 D
	P7-3	VntFctPrstB3 D#
	P7-4	VntFctPrstB3 E
	P7-5	VntFctPrstB3 F
	P7-6	VntFctPrstB3 F#
	P7-7	VntFctPrstB3 G
	P7-8	VntFctPrstB3 G#
Pipe	P8-1	Pianissimo
	P8-2	Piano
	P8-3	Mezzo Piano
	P8-4	Mezzo Forte
	P8-5	Forte
	P8-6	Fortissimo
	P8-7	Reed Solo
	P8-8	Portative

MIDI Implementation

Channel Voice Message

Note Off

Status	2nd Byte	3rd Byte
8nH	kkH	vvH, or
9nH	kkH	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
kk=Note Number:	00H - 7FH (0 - 127)	
vv=Velocity(disregard):	00H - 7FH (0 - 127)	

Note On

Status	2nd Byte	3rd Byte
9nH	kkH	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
kk=Note Number:	00H - 7FH (0 - 127)	
vv=Velocity:	00H - 7FH (0 - 127)	

Control Change

The value set by the Control Change is not reset even when Program Change messages etc. are received.

Bank Select (CC#0, 20)

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
mm,ll=Bank Number:	00 00H=User 01 00H=Preset	

Until you send the Program Change, the Bank Select process is reserved.

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	

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 - 3FH, 7FH (Patch #11 - 88, Manual)

Example of Patch operation

ex: select Patch U16
Bx 00 00 20 00 Cx 05 (x=Upper Channel)
ex: select Patch P88
Bx 00 01 20 00 Cx 3F (x=Upper Channel)
ex: select [Manual]
Bx 00 00 20 00 Cx 7F (x=Upper Channel)

Channel Mode Message

All Sounds Off (CC#120)

Status	2nd Byte	3rd Byte
BnH	78H	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
<i>When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.</i>		

Reset All Controllers (CC#121)

Status	2nd Byte	3rd Byte
BnH	79H	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
<i>When this message is received, the following controllers will be set to their reset values.</i>		
Expression:	127	
Glide:	0	
Damper:	0	
NRPN:	unset; previously set data will not change	

All Sounds Off (CC#123)

Status	2nd Byte	3rd Byte
BnH	7BH	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
<i>When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuo is ON, the sound will be continued until these are turned off.</i>		

Drawbar Data List 1

Control Number

Upper: 50H(80)

Lower: 51H(81)

Pedal: 52H(82)

Level	Upper / Lower									Pedal	
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'	16'	8'
0	00H(0)	09H(9)	12H(18)	1BH(27)	24H(36)	2DH(45)	36H(54)	3FH(63)	48H(72)	00H(0)	09H(9)
1	01H(1)	0AH(10)	13H(19)	1CH(28)	25H(37)	2EH(46)	37H(55)	40H(64)	49H(73)	01H(1)	0AH(10)
2	02H(2)	0BH(11)	14H(20)	1DH(29)	26H(38)	2FH(47)	38H(56)	41H(65)	4AH(74)	02H(2)	0BH(11)
3	03H(3)	0CH(12)	15H(21)	1EH(30)	27H(39)	30H(48)	39H(57)	42H(66)	4BH(75)	03H(3)	0CH(12)
4	04H(4)	0DH(13)	16H(22)	1FH(31)	28H(40)	31H(49)	3AH(58)	43H(67)	4CH(76)	04H(4)	0DH(13)
5	05H(5)	0EH(14)	17H(23)	20H(32)	29H(41)	32H(50)	3BH(59)	44H(68)	4DH(77)	05H(5)	0EH(14)
6	06H(6)	0FH(15)	18H(24)	21H(33)	2AH(42)	33H(51)	3CH(60)	45H(69)	4EH(78)	06H(6)	0FH(15)
7	07H(7)	10H(16)	19H(25)	22H(34)	2BH(43)	34H(52)	3DH(61)	46H(70)	4FH(79)	07H(7)	10H(16)
8	08H(8)	11H(17)	1AH(26)	23H(35)	2CH(44)	35H(53)	3EH(62)	47H(71)	50H(80)	08H(8)	11H(17)

ex: Set Lower 8' to level 7 via MIDI... Bx 51 19 (x=Lower Channel)

Drawbar Data List 2

Part	Control Number								
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Upper	0CH(12)	0DH(13)	0EH(14)	0FH(15)	10H(16)	11H(17)	12H(18)	13H(19)	14H(20)
Lower	15H(21)	16H(22)	17H(23)	18H(24)	19H(25)	1AH(26)	1BH(27)	1CH(28)	1DH(29)
Pedal	21H(33)	-	23H(35)	-	-	-	-	-	-

Value	Level								
	0	1	2	3	4	5	6	7	8
00 - 0FH (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. 108 #9)
10	Model ID MSB
20	Model ID LSB
11	Command: Data Packet
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
[DATA]	128 Bytes Data 256 Bytes nibblized ASCII ex: 7EH = 37H, 45H
[CHD]	Check Digit Lower 7 bits of XOR [DATA]
F7	End Of Exclusive

2. Acknowledge

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
20	Model ID LSB
14	Command: Acknowledge
[TYPE]	Data Type
[AK]	Result 00H = OK 05H = Check Digit Error 06H = Receive Protected
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
F7	End Of Exclusive

3. # of Packets

All Data Dump:	466
Combi. Temp Dump:	27
Global Dump:	6
System Dump:	1

◆ Dump Request (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
20	Model ID LSB
12	Command: Dump Request
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
F7	End Of Exclusive

Mode Setting Exclusive Message

Full Parameters Reset (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
42	Mode ID for DT1
12	Command: DT1
40	Address MSB
00	Address
7F	Address LSB
7F	Reset
42	Check Sum
F7	End Of Exclusive

NRPN Switch

F0	Suzuki Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
20	Model ID LSB
02	Command: NRPN Sw.
[DATA]	00H = Off, 7FH = On
F7	End Of Exclusive

When this device receives this message, switch Tx & Rx NRPN in Control channel.

Data Set (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
20	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 20	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)	0338	440
Expression	Source	02	00	00	02	00	01	00 - 01 00: Pedal (normal) 01: Pedal (reverse) 02: MIDI	00	Pedal (normal)
	Min. Level	02	08	00	02	08	01	00 - 09 (Off, -40dB - 0dB)	06	-35dB
	Min. Limit LF	02	09	00	02	09	01	00 - 08	05	-20dB
	Min. Limit HF	02	0A	00	02	0A	01	(Off, -40dB - -5dB)	03	-30dB
Foot Switch	FS Device	03	00	00	03	00	01	00 - 01 (Foot Sw., Leslie Sw.)	00	Foot Sw.
	FS Tip Mode	03	01	00	03	01	01	00 - 25 00: Off 01: Leslie Fast (alternate) 02: Leslie Fast (momentarily) 03: Leslie Fast (tri-state) 04: Glide 05: Patch Fwd. 06: Patch Back 07: Favorite Fwd. 08: Favorite Back 09: Spring Shock 0A: Delay Time 0B: Damper 0C: Manual Bass 0D - 25: Bass 1C - 3C	01	Leslie Fast (alternate)
	FS Ring Mode	03	02	00	03	02	01	same as FS Tip mode	01	Leslie Fast (alternate)
	Damper Org. Upper	03	03	00	03	03	01	00, 01 (Off/On)	01	On
	Damper Org. Lower	03	04	00	03	04	01	00, 01 (Off/On)	01	On
	Damper Org. Pedal	03	05	00	03	05	01	00, 01 (Off/On)	01	On
Patch Load	Drawbar Regist. Upper	60	00	00	60	00	01	00, 01 (Off/On)	01	On
	Drawbar Regist. L/P	60	01	00	60	01	01	00, 01 (Off/On)	01	On
	Drawbar Parameters (DRAWB)	60	02	00	60	02	01	00, 01 (Off/On)	01	On
	Internal Zone (INT)	60	04	00	60	04	01	00, 01 (Off/On)	01	On
	External Zone (EXT)	60	05	00	60	05	01	00, 01 (Off/On)	01	On
	Organ Effect (DRAWB)	60	06	00	60	06	01	00, 01 (Off/On)	01	On
	Reverb (REV)	60	08	00	60	08	01	00, 01 (Off/On)	01	On
	Animation (ANI)	60	09	00	60	09	01	00, 01 (Off/On)	01	On
Favorites	Overwrite Patch	04	00	00	04	00	01	00, 01 (Off/On)	00	Off
Display	Short Cut	--	--	--	--	--	--	0, 1, 2s, No		
	Time Out	--	--	--	--	--	--	4, 8, 16s, No		
	Pop Up	--	--	--	--	--	--	No, 0.5, 1, 2s		
Master EQ	Bass Freq.	02	0F	00	02	0F	01	00 - 0A (20 - 200Hz)	07	100Hz
	Treble Freq.	02	10	00	02	10	01	00 - 03 (4.0k - 8.0kHz)	03	8.0kHz

Example Set Transpose at 0 via NRPNBx 62 01 63 00 06 40 (x = Upper channel)
 Set Transpose at 0 via System Exclusive.....F0 55 dd 10 1D 13 00 01 00 40 F7 (dd = Device ID)

Patch Parameters

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Name	15 Characters	--	--	01	00	00	0F	7 bit ASCII	always
Internal Zone	Manual Bass	07	00	00	07	00	01	00, 01 (Off/On)	INT
	Manual Bass Mode	07	01	00	07	01	01	00 - 02 (Lower, Chord, Poly)	
	Manual Bass Range Hi	07	02	00	07	02	01	24 - 60 (MIDI note number)	
	Great To Pedal	07	03	00	07	03	01	00, 01 (Off/On)	
	G to P Range Hi	07	04	00	07	04	01	24 - 3C (MIDI note number)	
	Split	07	05	00	07	05	01	00, 01 (Off/On)	
	Split Point	07	06	00	07	06	01	24 - 60 (MIDI note number)	
	Key Octave Upper 1	07	07	00	07	07	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Octave Lower 1	07	08	00	07	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Glide Length	07	09	00	07	09	01	00 - 18 (0 - 24 semitones)	
	Glide Time	07	0A	00	07	0A	01	00 - 31 (0.1 - 5.0 seconds)	
	Glide Amp	07	0B	00	07	0B	01	00, 01 (Off/On)	
	Key Octave Upper 2	07	0C	00	07	0C	01	3E - 40 - 42 (-2 - 0 - +2)	
Key Octave Lower 2	07	0D	00	07	0D	01	3E - 40 - 42 (-2 - 0 - +2)		
External Zone	MIDI Channel	4n	00	00	4n	00	01	00 - 0F (1 - 16)	EXT
	Switch	4n	01	00	4n	01	01	00, 01 (Off/On)	
	Allocate	4n	02	00	4n	02	01	00 - 03 00: Off 01: Upper 02: Lower 03: Pedal	
	Key Range Lo	4n	03	00	4n	03	01	24 - 60 (MIDI note number)	
	Key Range Hi	4n	04	00	4n	04	01	24 - 60 (MIDI note number)	
	Bank Select MSB	4n	05	00	4n	05	01	00 - 7F	
	Bank Select LSB	4n	06	00	4n	06	01	00 - 7F	
	Program Change	4n	07	00	4n	07	01	00 - 7F	
	Octave Shift	4n	08	00	4n	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Volume	4n	09	00	4n	09	01	00 - 7F	
	Pan	4n	0A	00	4n	0A	01	00 - 40 - 7F (L64 - C - R63)	
	Velocity	4n	0B	00	4n	0B	01	00 - 04 (Off, Normal - Easy)	
	Expression Minimum	4n	0C	00	4n	0C	01	00 - 3F (0 - 63)	
	Expression Maximum	4n	0D	00	4n	0D	01	40 - 7F (64 - 127)	
	Expression CC#	4n	0E	00	4n	0E	01	00, 01 (7, 11)	
Tx. Damper On	4n	0F	00	4n	0F	01	00, 01 (Off/On)		

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 1F 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)	DRAWB
	Third On	08	01	00	08	01	01	00, 01 (Off/On)	
	Decay Fast	08	02	00	08	02	01	00, 01 (Off/On)	
	Volume Soft	08	03	00	08	03	01	00, 01 (Off/On)	
	Level On Soft	08	04	00	08	04	01	00 - 0F (1 - 16)	
	Level On Normal	08	05	00	08	05	01	00 - 0F (1 - 16)	
	Decay Fast	08	06	00	08	06	01	00 - 09 (1 - 9, Cont)	
	Decay Slow	08	07	00	08	07	01	00 - 09 (1 - 9, Cont)	
	Touch	08	08	00	08	08	01	00, 01 (Off/On)	
	Velocity	08	09	00	08	09	01	00, 01 (Off/On)	
	Key Track	08	0A	00	08	0A	01	00, 01 (Off/On)	
	Drawbar 1' Cancel	08	0B	00	08	0B	01	00, 01 (Off/On)	
Drawbar Level	08	0C	00	08	0C	01	00, 01 (0, -3dB)		
Lower & Upper Organ section	Organ Type	20	00	00	20	00	01	00 - 05 00: B-Type 1 01: B-Type 2 02: Mellow 03: Vx 04: Farf 05: Pipe	DRAWB
	Key Click Attack	20	01	00	20	01	01	00 - 0F (0 - 15)	
	Key Click Release	20	02	00	20	02	01	00 - 0F (0 - 15)	
	Fold Back Lo	20	03	00	20	03	01	00 - 0C (C1 - C2)	
	Fold Back Hi	20	04	00	20	04	01	2B - 30 (G4 - C5)	
	Key Click LPF	20	05	00	20	05	01	00 - 7F (0 - 127)	
	Custom TW B-Type 1	20	06	00	20	06	01	00 - 04 (1 - 5)	
	Custom TW B-Type 2	20	07	00	20	07	01	00 - 04 (1 - 5)	
	Custom TW Mellow	20	08	00	20	08	01	00 - 04 (1 - 5)	
	Octerve Shift Upper	20	09	00	20	09	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Upper	20	0A	00	20	0A	01	24 - 60 (MIDI note number)	
	Key Range Hi Upper	20	0B	00	20	0B	01	24 - 60 (MIDI note number)	
	Octerve Shift Lower	20	0C	00	20	0C	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Lower	20	0D	00	20	0D	01	24 - 60 (MIDI note number)	
Key Range Hi Lower	20	0E	00	20	0E	01	24 - 60 (MIDI note number)		
Upper Registration	16'	--	--	01	01	00	01	00 - 08 (0 - 8)	UPPER
	5 1/3'	--	--	01	01	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	01	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	01	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	01	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	01	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	01	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	01	07	01	00 - 08 (0 - 8)	
1'	--	--	01	01	08	01	00 - 08 (0 - 8)		
Lower Registration	16	--	--	01	02	00	01	00 - 08 (0 - 8)	L/P
	5 1/3'	--	--	01	02	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	02	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	02	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	02	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	02	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	02	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	02	07	01	00 - 08 (0 - 8)	
1'	--	--	01	02	08	01	00 - 08 (0 - 8)		

130 MIDI INFORMATION - continued

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load
		LSB (62)	MSB (63)	MSB	to	LSB			
Pedal	Tonewheel Set	22	00	00	22	00	01	00 - 03 00: Normal 01: Muted 02: Synth 1 03: Synth 2	DRAWB
	Attack	22	01	00	22	01	01	00 - 04 00: Slow Attack 01: No Click 02: Soft Click 03: Normal Click 04: Max Click	
	Sustain On	22	03	00	22	03	01	00, 01 (Off/On)	
	Sustain Length	22	04	00	22	04	01	00 - 04 (1 - 5)	
	Decay Length	22	05	00	22	05	01	00 - 05 (1 - 5, Cont)	
	Velocity	22	06	00	22	06	01	00 - 04 (Off, Normal - Easy)	
	Key Mode	22	07	00	22	07	01	00, 01 (Mono/Poly)	
	Octerve Shift	22	08	00	22	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	22	09	00	22	09	01	24 - 60 (MIDI note number)	
Key Range Hi	22	0A	00	22	0A	01	24 - 60 (MIDI note number)		
Pedal Registration	16'	--	--	01	03	00	01	00 - 08 (0 - 8)	L/P
	8'	--	--	01	03	01	01	00 - 08 (0 - 8)	
Organ Effect	Leslie Bypass	09	00	00	09	00	01	00, 01 (Enable / Bypass)	ANI
	Leslie Fast	09	01	00	09	01	01	00, 01 (Slow / Fast)	
	Leslie Stop	09	07	00	09	07	01	00, 01 (Turn / Stop)	
	Leslie Cabinet Number	09	08	00	09	08	01	00 - 07 (1 - 8)	
	Vibrato On Swell	09	04	00	09	02	01	00, 01 (Off/On)	
	Vibrato On Great	09	03	00	09	03	01	00, 01 (Off/On)	
	Vibrato Mode	09	04	00	09	04	01	00 - 05 (V1 - C3)	
	Vibrato Rate	09	05	00	09	05	01	00 - 04 (6.1 - 7.25Hz)	
	Vibrato V1 Depth	09	0D	00	09	0D	01	00 - 0F (1 - 16)	
	Vibrato V2 Depth	09	0E	00	09	0E	01	00 - 0F (1 - 16)	
	Vibrato V3 Depth	09	0F	00	09	0F	01	00 - 0F (1 - 16)	
	Vibrato C1 Depth	09	10	00	09	10	01	00 - 0F (1 - 16)	
	Vibrato C2 Depth	09	11	00	09	11	01	00 - 0F (1 - 16)	
	Vibrato C3 Depth	09	12	00	09	12	01	00 - 0F (1 - 16)	
	Vibrato Tremolo	09	13	00	09	13	01	00 - 0F (0 - 15)	
	Vibrato Cho. Emphasis	09	14	00	09	14	01	00 - 09 (0 - 9)	
Vibrato On Pedal	09	15	00	09	15	01	00, 01 (Off/On)		

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load
		LSB (62)	MSB (63)	MSB to LSB					
Effects	Overdrive On	3p	00	00	3p	00	01	00, 01 (Off/On)	EFFECT p=0: DRAWB
	Overdrive Type	3p	01	00	3p	01	01	00 - 03 00: Tube 01: Stomp Box 02: Clip 03: E. Pf. Amp	
	Overdrive Drive Level	3p	02	00	3p	02	01	00 - 7F	
	Overdrive Controlled Exp.	3p	03	00	3p	03	01	00-03 00: EX-OD 01: OD-EX 02: OD Only 03: Input	
	Multi Effect On	3p	04	00	3p	04	01	00, 01 (Off/On)	
	Multi Effect Type	3p	05	00	3p	05	01	00-07 00: Tremolo 01: Auto Pan 02: Wah-Wah 03: Ring Mod. 04: Phaser 05: Flanger 06: Chorus 07: Delay	
	Multi Effect Parameter 0	3p	06	00	3p	06	01	00-03	
	Multi Effect Parameter 1	3p	07	00	3p	07	01	00-03	
	Multi Effect Parameter 2	3p	08	00	3p	08	01	00-7F	
	Multi Effect Parameter 3	3p	09	00	3p	09	01	00-7F	
	Multi Effect Parameter 4	3p	0A	00	3p	0A	01	00-7F	
	Multi Effect Parameter 5	3p	0B	00	3p	0B	01	00-7F	
	Multi Effect Parameter 6	3p	0C	00	3p	0C	01	00-7F	
	Multi Effect Parameter 7	3p	0D	00	3p	0D	01	00-7F	
	EQ Bass Gain	3p	0E	00	3p	0E	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Bass Frequency	3p	0F	00	3p	0F	01	00 - 0A (20 - 200Hz)	
	EQ Mid Gain	3p	10	00	3p	10	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Mid Frequency	3p	11	00	3p	11	01	00 - 0A (250 - 3.1kHz)	
	EQ Treble Gain	3p	12	00	3p	12	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Treble Frequency	3p	13	00	3p	13	01	00 - 03 (4.0 - 8.0 kHz)	
	EQ Tone Control	3p	14	00	3p	14	01	00 - 09 - 12 (-9 - 0 - +9)	
	Reverb On	0A	00	00	0A	00	01	00, 01 (Off/On)	REV
	Reverb Type	0A	01	00	0A	01	01	00 - 0A 00: Room 1 01: Room 2 02: Live House 03: Hall 1 04: Hall 2 05: Church 06: Plate 07: Spring 08: Delay 09: Panning Delay 0A: Reverb + Delay	
	Reverb Level	0A	02	00	0A	02	01	00 - 7F (0 - 127)	
	Reverb Time	0A	03	00	0A	03	01	00 - 7F (0 - 127)	
	Reverb Delay Feedback	0A	04	00	0A	04	01	00 - 1F (0 - 96%)	
	Reverb Delay Time	0A	05	00	0A	05	01	00 - 44 (4.7 - 2000ms)	

Example: "p" means Section number. Organ=0
 Set Multi-Effect at Phaser via NRPNBx 63 05 62 30 06 04 26 00 (x = Upper channel)
 Set Multi-Effect at Phaser via SysExF0 55 dd 10 1F 13 00 30 05 04 F7 (dd = Device ID)

Leslie Parameters

Category	Parameter	NRPN (XK)		NRPN (21)		SysEx Address			SysEx Length	Data
		LSB (62)	MSB (63)	LSB (62)	MSB (63)	MSB to LSB				
Cabinet	Name	--	--	--	--	03	00	00	0A	(10 Characters)
	Slow Speed Horn	06	00	7F	00	00	06	00	01	
	Slow Speed Bass	06	01	7F	01	00	06	01	01	
	Fast Speed Horn	06	02	7F	02	00	06	02	01	
	Fast Speed Bass	06	03	7F	03	00	06	03	01	
	Rise Time Horn	06	04	7F	04	00	06	04	01	
	Rise Time Bass	06	05	7F	05	00	06	05	01	
	Fall Time Horn	06	06	7F	06	00	06	06	01	
	Fall Time Bass	06	07	7F	07	00	06	07	01	
	Brake Time Horn	06	08	7F	08	00	06	08	01	
	Brake Time Bass	06	09	7F	09	00	06	09	01	
	Level Horn	06	0A	--	--	00	06	0A	01	
	Level Bass	06	0B	--	--	00	06	0B	01	
	Mic. Angle	06	0C	7F	0A	00	06	0C	01	
	Mic. Distance	06	0D	7F	0B	00	06	0D	01	
	Horn Character	06	0E	7F	0D	00	06	0E	01	
	Amplifier	06	0F	--	--	00	06	0F	01	
	Speaker	06	10	--	--	00	06	10	01	
Coloration	06	11	--	--	00	06	11	01		

NRPN XK/21 is switched automatically by Leslie speaker is disconnected/connected.

System Parameters

Category	Parameter	Data Range	Default Value
MIDI	MIDI IN	Lower, Pedal, Low+Ped, Sequence, Upper, Upp+Ped	Sequence
	Local Control	Off/On	On
	TRx. NRPN	Off/On	On
	Tx. Leslie Param.	OR/21	OR
	Rx. Dump	Off/On	On
	TRx. Prog. Change	Off/On	On
	TRx. Drawbar Regi.	Off/On	On
	Tx. Ext. Zone	Off/On	Off
	TRx. Channel Upper	1 - 16, Off	1
	TRx. Channel Lower	1 - 16, Off	2
	TRx. Channel Pedal	1 - 16, Off	3
	Device ID	1 - 32	1
Keyboard	Velocity Offset	-32 - +32	0
	Sounding Point	Deep / Auto	Deep
Audio	Output	Stereo / Mono	Stereo
Ext. Leslie	Channel(s)	1, 3	3

Tonewheel Parameters

Category	Parameter	Data Range
Tone-Wheels	Name	(10 characters)
	Level	-20 - +2 [dB]
	HPF Cut Off Freq.	0 - 127
	LPF Cut Off Freq.	0 - 127
	LPF Resonance	-100 - +100

Pipe Parameters

Category	Parameter	Data Range
Pipe	Volume	0 - 127
	Detune	-50 - +50
	Chiff	Off, Soft, Mid, Loud
	Cut Off Freq.	-64 - +0
	Pan - Direction	L64 - C - R63
	Pan - Imaging	Fixed, L-R, R-L, Pyramid, Inverted Pyramid

◆ BType1, BType2

Real B-3

Type based upon a B-3 in good condition. It contains moderate motor hum and leakage noise.

80's Clean

Type based upon the popular clear sound 80's B-3. The motor hum or leakage noise has been removed, the delicate "vibration" caused by the wow-flutter of the motor still remains.

Noisy

This is a custom replicating the entire sound output from the B-3, including the motor hum and leakage noise.

Noisy 60

Type based upon very prominent leakage noise.

◆ Mellow

Full Flats

Type based on perfect sine waves, and a hypothetical Hammond in which all tone wheels oscillate at the same volume.

Husky

Type with characteristics of mid-range and reduced volume.

Flute Lead

Type with characteristics of reduced bass and treble, opposite to the "Husky".

Cheap Tr.s

Like a portable radio, reduced bass-range.

MIDI IMPLEMENTATION CHART

Drawbar Keyboard
Model: XK-1C

MIDI Implementation Chart

Date: 28-Jun-2013
Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	*1 1 - 16	*1 1 - 16	*1: Upper = 1, Lower = 2, Pedal = 3
Mode	Default Messages Altered	3 X *****	3 X X	
Note Number	: True Voice	12 - 120 *****	36 - 96 36 - 96	
Velocity	Note ON Note OFF	O X	O X	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	0, 32	O	O	Bank Select MSB, LSB
	1	X	X	Modulation
	6, 38	O	O	Data Entry MSB, LSB
	7	O	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
	92	X	O	Leslie Fast
	98, 99	O	O	NRPN MSB, LSB
Program Change	: True #	O 0 - 127	O 0 - 81	
System Exclusive		O	O	
System Common	: Song Position : Song Select : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: All Sounds Off : Reset All Controllers : Local On/Off : All Notes Off : Active Sense : Reset	X O X O O X	O O X O O X	(120) (121)

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 CHANNELS AND MESSAGES

	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
Drawbar Reg.	X	CC#80, 12 - 20 (Upper) 21 - 29 (Lower) 33, 35 (Pedal)	CC#81	CC#82
Spring Shock, Glide (48, 49)	X	O	X	X
Leslie Fast (92)	X	O	X	X
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	X	X
Program Change			X	X

*1: It works for all parts (audio controlled)

*2: For Rx. only.

Sound Generator

- 2 - VASE III as Digital Tone-wheels, Transistor Organ and Pipe Organ
- 61 polyphony (for manual, except Pipe Organ)
- 8 polyphony (for pedal, except Pipe Organ)
- 63 polyphony (maximum, on Pipe Organ)

Keyboards

- C1 to C6 61-key

Harmonic Drawbars**Drawbars**

- 9 Pitches, assignable for Upper, Pedal, Lower

Voicing

- Manuals: 6 choices (B-Type1, B-Type2, Mellow, Vx, Farf, Pipe), variable key-click
- Pedal: 4 choices (Normal, Muted, Synth1, Synth2), 5 choices key-click

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
- Buttons: 1, 2, Chorus, Upper On, Lower On

Overdrive

- Digital, 4 programs
- Control: Amount

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**

- Manual Bass, Split

Adjustable

- Coupler Highest note, Split Point, Octave Up, Octave Down, Lower, Transpose

Patches**Capacity**

- 64 User Patches, 64 Preset Patches, Manual

Favorites

- 8 buttons

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
- Control Buttons and Value knob

MIDI**Templates**

- 8 Templates

External Zones

- 3 Zones, assignable any keyboards

Connections**MIDI**

- In, Out

Audio

- Line Out L, R, Headphones

Leslie

- 8 - pin, 1 and 3 channels available

Other

- Foot Switch, Exp. Pedal, DC IN (12V)

Accessory

- AC Adaptor AD3-1250

Dimensions

- 958(W), 305(D), 101(H) mm
- 37.7"(W), 12"(D), 3.97"(H)

Weight

- 7.5 kg
- 16.5 lbs

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Hammond maintains a policy of continuously improving and upgrading its instruments and therefore reserves the right to change specifications without notice. Although every attempt has been made to insure the accuracy of the descriptive contents of this 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:

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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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