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Since 1934



H A M M O N D O R G A N O X K - 3 c



## The Hammond Organ Timeline.

- 1895 Inventor, Laurens Hammond was born.
- 1934 The first Hammond Organ was released to the world.
- 1955 Classic Hammond Model B-3 begins production.
- 1975 The Mechanical Tone-Wheel B-3 production ends.
- 2002 Digital Tone-Wheel B-3 production begins.
- 2004 Combo Model XK-3 with digital Tone-Wheels begins production using technologies developed for the "New B-3".
- 2007 XK-3c begins production incorporating updates and refinements developed over years of research.



**Our goal is to recapture the sound of  
the original Hammond Organ.**

HAMMOND  
ORGAN **XK-3c**



Laurens Hammond



Hammond Organ Company










*"Music is a thing that everybody should enjoy"*  
by Laurens Hammond



# New Features

To be a True Hammond ...  
To surpass the vintage Hammond ...

- 1  More choices for independently voicing each of the 96 digital tone-wheels
- 2  More authentic key-click and percussion
- 3  Independent vibrato/chorus control for each manual
- 4  Genuine Tube Preamp/Overdrive with 2 discrete tubes (12ax7/12au7)
- 5  Addition of the B-3 Tone Control function
- 6  Advanced Digital Leslie with enhanced controls
- 7  Advanced MIDI Master "real-time" controller functions

HAMMOND  
ORGAN **XK-3c**

"Out of the Box", the XK-3c is set up to be reminiscent of a very fine vintage Hammond B-3 Organ. However, the XK-3c allows you advanced and comprehensive control over all of the different features of a Hammond Organ. This allows you to mold your XK-3c into your "Dream Organ" which will sound and play *exactly* as you wish. Until now, technicians have commanded high prices to customize a B-3 to individual tastes-Now you have all of this control at your fingertips, in a simple interface. Or you can just play your XK-3c without modification-either way the XK-3c is designed to be "mirror image" of a classic Hammond Organ.



# Sound Generator

## » Digital Tone Wheel

The XK-3c's digital tone wheel generator is the latest generation Hammond engine based on the same principles as the vintage mechanical tone-wheel generator. The 96 digital tone-wheels are constantly oscillating and re-create the original Wow and Flutter. In the vintage Hammonds, the close proximity of the mechanical wheels produced an imperfection called "leakage" that came to be part of the original charm of the instrument. This effect has been recaptured and may be introduced incrementally into your personal sound setup. The XK-3c has full polyphony, and the keyboard has been updated to feel and play like a vintage B-3.

Every vintage B-3 has its own personality and voice, based on the age and condition of the mechanical tone-wheel generator. The XK-3c allows you to tailor the organ's digital tone-wheel generator to your own specification and further, to recall it in an instant. There are 5 basic tone-wheel sets: B-Type 1, B-Type 2, Mellow, Brite, and Saw., with variations of each. There are also further levels of control for the user who seeks a wider variation and customization of sound. Each of the 96 digital tone-wheels can be individually voiced for volume, timbre, motor noise and leakage, and recalled as a complete custom setup. Note that these settings are not compiled effects, but are controls of the sound generators themselves.

## The 5 types of tone-wheel sets and their variations

B-Type1   What would have been heard from the final preamplifier output of a Vintage B-3				
<b>1. Real B-3</b> Normal B-3 sound with some leakage	<b>2. 80's Clean</b> A clear sound without leakage	<b>3. Noisy</b> Pronounced leakage and motor noise	<b>4. Noisy 60</b> Sound with a great deal of leakage, motor noise and 60-cycle hum	<b>5. User setting</b> (for your own creation)
B-Type2   A Re-creation of the sound that would be heard from the output of the first amp in the preamplifier of a Vintage Hammond				
<b>1. Real B-3</b> Normal B-3 sound with some leakage	<b>2. 80's Clean</b> A clear sound without leakage	<b>3. Noisy</b> Pronounced leakage and motor noise	<b>4. Noisy 60</b> Sound with a great deal of leakage, motor noise and 60-cycle hum	<b>5. User setting</b> (for your own creation)
Mellow   Clear sound recapturing 80's LSI organ (no leakage or Motor noise at all)				
<b>1. Full Flats</b> Equal volume and "Flat" EQ curve over the entire keyboard	<b>2. Husky</b> "Dipped" or "Smile" EQ curve (pronounced Low and High frequencies)	<b>3. Flute Lead</b> Flat Lows and Highs with pronounced Mid frequencies (sometimes called "Frown" or "Reverse Smile" curve)	<b>4. User setting</b> (for your own creation)	<b>5. User setting</b> (for your own creation)
Brite   Sounds in the style of analog organs of the 70's				
<b>1. Classic X-5</b> The analog sound of the Hammond X-5	<b>2. Voxy Full</b> The sound of the classic British combo organ of the 70's	<b>3. Cheap Tr.s</b> The sound of an inexpensive Low-fi combo organ	<b>4. User setting</b> (for your own creation)	<b>5. User setting</b> (for your own creation)
Saw   More 70's Analog organ sounds				
<b>1. Farf.Norm</b> The "normal" sound of the famous Italian combo organ	<b>2. Farf.Boost</b> The "boost" sound of the famous Italian combo organ	<b>3. Cheap Tr.s</b> Another style of inexpensive Low-fi combo organ	<b>4. User setting</b> (for your own creation)	<b>5. User setting</b> (for your own creation)

## » Percussion

Hammond's "Touch Response Percussion" is one of the hallmark features that made the B-3's sound so distinctive and expressive. The sounds, the response and the controls are re-created to the exact degree on the XK-3c. Even the eccentricities and imperfections that grew to be highly desired are created anew. As with all Vintage B-3s, the percussion section's personality varied from organ to organ, and keeping in the spirit of the XK-3c, you are now able to adjust all the parameters to tailor the percussion to your taste.



## » Key click

The Vintage Hammond used a mechanical "Buss-Bar" system behind the keys, which triggered each note played. As this involved live electrical circuits being made, as the organ aged, a slight noise was heard every time a key was pressed (or released), Hammond engineers tried to rectify that imperfection, but as with so many of the other eccentricities of the Hammond, the effect grew to be highly desired, with some even adding modifications to enhance the key-click. The XK-3c uses digital keying, but the key-click effect can still be had, with extensive control as to the volume, envelope and timbre of the click. The control goes further with the dynamic change of the click according to the drawbar's registration. The culmination of this is that the performance feel is much closer to a "buss-bar" keyboard, and the key-click can be set to your taste.

## Internal structure of the vintage tone-wheel system



The Tone Generator of the Hammond Organ consisted of 96 tone wheels spinning at a constant speed. Each wheel had a notched surface that determined the pitch of the corresponding note. A magnetic pickup was positioned in front of each wheel, which would "sense" the notches and produce a perfect sine wave at the exact pitch. In the XK-3c, digital oscillators that are constantly playing provide the sine wave without moving parts.

# Effect

## » Vibrato & Chorus

The XK-3c features a newly-redesigned "Chorus Vibrato" section which flawlessly duplicates the effect of the original mechanical "scanner" chorus vibrato of the vintage B-3. Also new are the independent keyboard sends for the Chorus Vibrato, just as on the vintage B-3.



A Rotary switch selects the Vibrato Chorus depth (V/C 1-2-3) also like a vintage B-3, where "1" is shallow, "2" is normal. And "3" is deep. "Out of the box" the Chorus Vibrato is calibrated to the standard settings that were common on a vintage B-3, but every aspect of the Chorus Vibrato may be set to personal tastes, if desired.

## » Leslie

The Leslie Speaker has always been the only choice for amplifying a Hammond Organ. With a rotating horn for the treble and a woofer firing into a rotating drum for the bass, the Leslie gives the Hammond organ a moving and unforgettable sound. The Leslie engineers have worked closely with Hammond (Both are owned by Suzuki Music) to come up with a new and improved Digital Leslie onboard the XK-3c that rivals the mechanical in sound quality.

All controls for the Leslie are mounted in the same area that you would find them on a B-3, and if desired, the classic "half-moon" switch may be added as an option. Further controls for the Leslie can be had in the form of a footswitch or on the toe-tab of the EXP-100F Expression pedal. All aspects of the Digital Leslie can be modified in the edit menu of the XK-3c, including Amplifier/Speaker type, rotation speeds and virtual microphone positions. Here is a sample of the controls available:



### Amplifier type

**Solid** Solid-state amp. With flat EQ

**Tube** Tube amplifier with mild coloring

(This is a virtual setting and not connected with the internal real tubes of the XK-3c)

### Speaker type

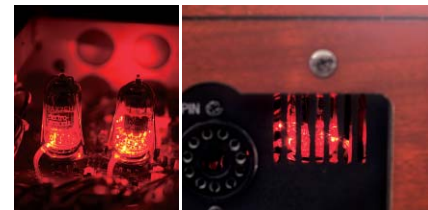
**Rot Small** Compact type Leslie amp. Typified by the Leslie 3300

**Rot Large** Large type Leslie amp. Typified by the Leslie 122

**Station** Fixed speaker typified by the Hammond PR-40

## » Tube Pre-amplifier

The XK-3c's tube pre-amplifier now has 2 actual vacuum tubes: a "12AU7" and a "12AX7". These tubes may be used by themselves, or in series to "warm" the sound, add a bit of grind, or crank it up to full rock overdrive. The tube/preamp section has a complete compliment of controls, including fine adjustment of the bias voltage in each tube.



### Tube mode

#### S-U7

Uses the "12AU7". The entire audio range is covered

#### D-UX

Low-end freq. uses the "12AU7"; High-end freq. uses the "12AX7"

#### S-X7

Uses the "12AX7". The entire audio range is covered

#### D-XU

Low-end freq. uses the "12AX7"; High-end freq. uses the "12AU7"

## » Equalizer

The Original B-3 had a tone control on its internal preamp that gently cut the high-end frequencies above 2khz. On the new XK-3c, that control is replicated in the equalizer section. This allows you to shape your sound from the mild classic Hammond to the full power of the B-3. In addition to this control, there is a three band Equalizer with parametric mid that lets you dial in your perfect tone.



Original B-3/C-3 has a **TONE CONTROL** in the amplifier.

# Performance

## » 3 sets of Drawbars

The drawbars are the heart of the Hammond organ. They control the various harmonics that make up the Hammond sound. The further you pull the drawbar out, the louder that harmonic sounds. There are no "right" or wrong ways to set the drawbars. Keep moving them until you find a sound you like. There are three sets of drawbars that can serve as 2 independent sets plus manual bass when in single manual mode, or Upper, Lower and Pedal when used as part of the Pro or Traditional XK double manual system.



## » Preset-key

In the same manner as the vintage B-3, one octave of keys with a reversed color scheme is used as presets. Unlike the vintage, these do not "latch" but have corresponding indicator lights. Also unlike the vintage there are 12 banks available. This makes for a total of 132 settings (12 banks x 11 preset keys). Two of the banks are exact copies of the original B-3 factory settings (Church and popular). New to the XK-3c is the lock combination-preset system, so you can avoid overwriting a preset that you did not intend to change.

## Combination Preset Chart

Bank	P r e s e t K e y											Adjust B
	C	C#	D	D#	E	F	F#	G	G#	A	A#	
C	Default	Cancel	Jimmy	Lo & Hi 1	Warmth	Groove	Funky	Purple	Funky	Full Tibias	Full Organ	Full Church
C#	Jazz	Cancel	Jimmy 1	Jimmy 2	Jimmy 3	Burner	Groove	Smooth Bass	Shirley	Jimmy MC	Fat Bass	All Nine
D	Gospel	Cancel	Gospel 1	Gospel 2	Gospel 3	Gospel 4	Praise 1	Praise 2	Praise 3	Praise 4	Meditation	Full Gospel
D#	Rock	Cancel	Purple	Perc Holow	Some Lovin	Booker	Rock 1	Rock 2	Rock 3	Full 1	Full 2	Full Overd
E	Theatre	Cancel	TheatreC#	Theatre D	Theatre D#	Theatre E	Theatre F	Theatre F#	Theatre G	Theatre G#	Theatre A	Full Theatre
F	Tibia	Cancel	Tibia 8 & 4	Tibia 8 & 2	Tibia & Vox	Tibia 8, 4 & 2	Tibia 16 & 8	Tibia 16 & 4	Tibia 16, 8 & 4	Tibia 16, 8, 4, 2	Full Tibia	
F#	Church	Cancel	Gedeckt 8	Flute 8 & 4	Principl 8	Princ Chrs	Rohr Flute	Gamba Clst	Cornet	Sesquialtr	Chrs & Mxt	Sforzando
G	Lo & Hi	Cancel	Lo & Hi 1	Lo & Hi 2	Lo & Hi 3	Odd Harm	M3 Low Man	Perc 16 & 4	Solo 16 & 2	Cute Solo	Eddies-wind	Full Hamm
G#	Intro 1	Cancel	WhiteShade	Percuss Bass	Four Beat	Funk Bass	Surf Coast	Blue Tigers	10th Avenue	Popcorn	Doubling	N. E. S.
A	Intro 2	Cancel	Soloist	Choke Nose	S.F.4ever	Tea Lounge	Pretty Baby	Triplet 90	Triplet 100	Triplet 110	Triplet 120	Triplet 130
A#	Demo Song	Cancel	SomeSlow 1	SomeSlow 2	SomeSlow 3	AcidWash 1	AcidWash 2	B-3 Cookin'	Shooting 1	Shooting 2	Liberatio 1	Liberatio 2
B	B-3	Cancel	Stopped Fl	Dulciana	Fr.Horn	Salicional	Flutes 8 & 4	Oboe Horn	Diapason	Trumpet	Full Swell	Full Church

## » External MIDI control

You can control external MIDI sources in real-time with the 6 assignable knobs and switches at the right hand side of the control panel. The XK-3c may be used as a master MIDI keyboard along with its natural organ sounds. You can set 3 zones for the Upper, 2 zones for the Lower and 1 zone for the Pedal. Program, Bank, and continuous controller messages for all zones can be saved in a preset, and the real-time performance controls are always live. The XK-3c keyboard is velocity-sensitive. The onboard organ voices may be shut off, if desired, but they are always available to mix with whatever MIDI instrument is played by the XK-3c; to make new and exciting hybrid sounds.



## » Waterfall keyboard

The XK-3c has a new design waterfall keyboard which has the same "feel" as a B3. The B-3's distinctive shallow contact point is also recaptured with the XK-3c. Glissandos and "squabbling" are now easier than ever. Those who normally play a vintage B-3 will feel right at home on the XK-3c.



## » Split & Manual Bass

You can split the 61-note keyboard into "upper" and "lower" ranges, or have the lowest part of the keyboard serve as "manual bass". Yet another variation of the "manual bass" feature plays the "pedal" part on the lowest note played. With the keyboard split, this can mimic the characteristics of a two-manual and pedal performance.



# Pro XK-System



● BCH-3XK Bench for Pro XK-System



Pro XK-System  
Lower manual **XLK-3**

Keyboard	61+12 (preset keys)
Terminal	MIDI OUT, FROM ORGAN EXP. 2, TO EXP. PEDAL
Dimensions	119cm (W) , 57cm (D) , 9cm (H) , (46 3/4" × 22 1/2" × 3 1/2")
Weight	13kg (28.7 lbs)



Pro XK-System  
Stand **ST-XLK3**

Dimensions	121cm (W) , 54cm (D) , 79cm (H) , (47 1/2" × 21 1/4" × 31")
Weight	11.5kg (25.4 lbs)



Pro XK-System  
Pedal Board **PK-25PXK**

Keyboard	25 keys
Terminal	MIDI OUT, Expression pedal out (8PIN)
Accessories	MIDI cable (2.0m) , 8PIN cable
Dimensions	107cm (W) , 90cm (D) , 20cm (H) , (42" × 35 1/2" × 8") - without expression pedal
Weight	25kg (55.1 lbs)



20 note MIDI  
Pedal Board **XPK-200**



13 note MIDI  
Pedal Board **XPK-100**

## XK-3c SPECIFICATIONS

Keyboard	73 (61+12 preset keys) Waterfall keys with velocity	Panel Controls	<b>Percussion</b> Second, third, decay fast, soft
Drawbars	2 sets of 9 and 1 set of 2 drawbars		<b>Control</b> Manual bass, split
Sound Generator	VASE III sound generator creates 96 digital tone-wheels. Tone-wheel leakage noise and motor-noise are adjustable wheel by wheel		<b>Assignable MIDI controllers</b> Upper 1, 2, 3, Lower 1, 2, Pedal, on/off, Value knobs
Presets	Original B-3 reverse color keys presets 11 Presets X 12 Banks + Cancel		<b>Effect</b> Tube amp, reverb on
Polyphony	Full polyphony (unlimited)		<b>User</b> Assignable function
LESLIE®	Advanced digital Leslie® and scanner vibrato		<b>Display switch</b> Page up/down, parameter, value ±, rotary encoder, Menu/exit, play, rec/jump, bank
Pre-amp & Overdrive	New dual tube amp (using Tube type 12AX7,12AU7) for pre amplification and overdrive		<b>Volume Control</b> Master volume, tone control, tube overdrive
Reverb	10 Modes, Leslie® on Reverb	Display	20-Characters, 2-Line backlight LCD
Tone Controls	Bass, mid range, treble, B-3 tone control	Terminal	AC input, Line out L/R, send/return, LESLIE® 11-Pin, MIDI In1/ In2/ Out, Headphone, input for expression Pedal EXP-100F, expression Pedal V-20R and input for foot-switch FS-9H & Leslie® half moon switch CU-1 Adding Lower keyboard and Pedal possible via MIDI
Sustain	On Pedal Drawbars	Card slot	CompactFlash®
Wheel	Pitch bend, Modulation	Power supply	100V (JPN) , 120V (CUL) , 230V (CE) , 240V (BS & SAA)
Panel Controls	<b>LESLIE®</b> Slow/fast, on/off, break/thru, effect <b>Vibrato/Chorus</b> Upper On, Lower on, V1, V2, V3, C1, C2, C3 with 6 position rotary knob, Emphasis and Depth are adjustable for each position	Dimensions	119 cm (W) X 40 cm (D) X 12 cm (H) (46 ¾" X 15 ¾" X 4 ¾")
		Weight/Finish	18.5 kg (40.8 lbs), Walnut Finish

## OPTIONAL ACCESSORIES

Leslie Cable <b>LC11-7M</b>	Expression pedal <b>EXP-100F</b>	Expression pedal <b>V-20R</b>	Leslie Switch <b>CU-1</b>	Foot Switch <b>FS-9H</b>	Hard case for XK-3c <b>HC-300</b>
					Hard case for XLK-3 <b>HC-XLK3</b>

Leslie **122XB**Leslie **3300W**Leslie **3300**Leslie **2101**Leslie **2121**

Optional accessories: Leslie Cable,  
Stand, Adapter for stand

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