



H A M M O N D O R G A N

XK-3c



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

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

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

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				
1. Real B-3 Normal B-3 sound with some leakage	2. 80's Clean A clear sound without leakage	3. Noisy Pronounced leakage and motor noise	4. Noisy 60 Sound with a great deal of leakage, motor noise and 60-cycle hum	5. User setting (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				
1. Real B-3 Normal B-3 sound with some leakage	2. 80's Clean A clear sound without leakage	3. Noisy Pronounced leakage and motor noise	4. Noisy 60 Sound with a great deal of leakage, motor noise and 60-cycle hum	5. User setting (for your own creation)
Mellow Clear sound recapturing 80's LSI organ (no leakage or Motor noise at all)				
1. Full Flats Equal volume and "Flat" EQ curve over the entire keyboard	2. Husky "Dipped" or "Smile" EQ curve (grounded Low and High frequencies)	3. Flute Lead Flat Lows and Highs with pronounced Mid frequencies (sometimes called Flute or Flute Lead type)	4. User setting (for your own creation)	5. User setting (for your own creation)
Brite Sounds in the style of analog organs of the 70's				
1. Classic X-5 The analog sound of the Hammond X-5	2. Voxy Full The sound of the classic British combo organ of the 70's	3. Cheap Tr.s The sound of an inexpensive Low-fi combo organ	4. User setting (for your own creation)	5. User setting (for your own creation)
Saw More 70's Analog organ sounds				
1. Farf.Norm The "normal" sound of the famous Italian combo organ	2. Farf.Boost The "boost" sound of the famous Italian combo organ	3. Cheap Tr.s Another style of inexpensive Low-fi combo organ	4. User setting (for your own creation)	5. User setting (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	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
C	Default	Cancel	Jimmy	Lo & H 1	Wormth	Groove	Purple	Funky	Full Tibian	Full Organ	Full Church	
C#	Jazz	Cancel	Jimmy 1	Jimmy 2	Jimmy 3	Burner	Smooth Bass	Shirley	Jimmy MC	Full Bass	All Nine	
D	Gospel	Cancel	Gospel 1	Gospel 2	Gospel 3	Gospel 4	Praise 1	Praise 2	Praise 4	Modulation	Full Gospel	
D#	Rock	Cancel	Purple	Perc Hollow	Some Lovin	Booker	Rock 1	Rock 2	Rock 3	Full 1	Full 2	Full Overd
E	Theatre	Cancel	Theatre G#	Theatre D	Theatre D#	Theatre E	Theatre F	Theatre F#	Theatre G	Theatre G#	Theatre A	Full Theatre
F	Tibia	Cancel	Tibia B & 4	Tibia B & 2	Tibia B & 1	Tibia B & 3	Tibia B & 5	Tibia B & 6	Tibia B & 7	Tibia B & 8	Tibia B & 9	Full Tibia
F#	Church	Cancel	Gedicks 1	Lo & H 1	Princip 1	Princ Chrs	Roly Pato	Gamba Clst	Connet	Sesquialts	Chrs & Met	Glissando
G	Lo & H 1	Cancel	Lo & H 2	Lo & H 3	Four Beat	Funk Bass	Surf Coast	Blue Tigers	10th Avenue	Popcorn	Doubleing	N.E.S.
G#	Intro 1	Cancel	WhiteShade	Percuss Bass	S.F. Fever	Tea Lounge	Pretty Baby	Triplet 90	Triplet 100	Triplet 110	Triplet 120	Triplet 130
A	Intro 2	Cancel	Soloist	Chuke Nease	AcidWash 1	AcidWash 2	B-3 Cookin'	Shooting 1	Shooting 2	Liberato 1	Liberato 2	
A#	Denno Song	Cancel	SomeSlow 1	SomeSlow 2	SomeSlow 3	Salicational	Plates B & 4	Obce Horn	Disappea	Trumpet	Full Swell	Full Church
B	B-3	Cancel	Shopped Fl	Quintana	Fl.Horn							

» 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



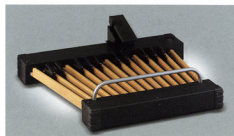
Pro XK-System Lower manual XLK-3

Keyboard	61+12 (preset keys)
Terminal	MIDI OUT, FROM ORGAN EXP. 2, TO EXP. PEDAL
Dimensions	119cm (W), 57cm (D), 8cm (H) (46 3/4" X 22 1/2" X 3 1/8")
Weight	13kg (28.7 lbs)



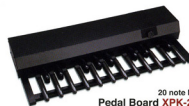
Pro XK-System Stand ST-LXK3

Dimensions	121cm (W), 54cm (D), 79cm (H) (47 3/4" X 21 1/2" X 31")
Weight	11.5kg (25.4 lbs)



Pro XK-System Pedal Board PK-25PXX

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" X 35 1/2" X 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
Drawbars	2 sets of 9 and 1 set of 2 drawbars
Sound Generator	VASE III sound generator creates 96 digital tone-wheels. Tone-wheel leakage noise and motor-noise are adjustable wheel by wheel
Presets	Original B-3 reverse color keys presets 11 Presets X 12 Banks + Cancel
Polyphony	Full polyphony (unlimited)
LESIE®	Advanced digital Leslie® and scanner vibrato
Pre-amp & Overdrive	New dual tube amp (using Tube type 12AX7,12AU7) for pre amplification and overdrive
Reverb	10 Modes, Leslie® on Reverb
Tone Controls	Bass, mid range, treble, B-3 tone control
Sustain	On Pedal Drawbars
Wheel	Pitch bend, Modulation
Panel Controls	LESIE® Slow/fast, on/off, break/thru, effect Vibrato/Chorus Upper On, Lower on, V1, V2, V3, C1, C2, C3 with 6 position rotary knob, Emphasis and Depth are adjustable for each position

Panel Controls	Percussion Second, third, decay fast, soft Control Manual bass, split Assignable MIDI controllers Upper 1, 2, 3, Lower 1, 2, Pedal, on/off, Value knobs Effect Tube amp, reverb on User Assignable function Display switch Page up/down, parameter, value ±, rotary encoder, Menu/exit, play, rec/jump, bank Volume Control Master volume, tone control, tube overdrive
Display	20-Characters, 2-Line backlight LCD
Terminal	AC input, Line out L/R, send/return, LESIE® 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
Card slot	CompactFlash®
Power supply	100V (JPN) , 120V (CUL) , 230V (CE) , 240V (BS & SAA)
Dimensions	119 cm (W) × 40 cm (D) × 12 cm (H) (46 3/4" × 15 3/4" × 4 3/4")
Weight/Finish	18.5 kg (40.8 lbs), Walnut Finish

OPTIONAL ACCESSORIES

Leslie Cable LC11-7M	Expression pedal EXP-100F	Expression pedal V-20R	Leslie Switch CU-1	Foot Switch FS-9H	Hard case for XK-3c HC-300 Hard case for XLK-3 HC-XLK3
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Leslie 122XB



Leslie 3300W



Leslie 3300



Leslie 2101



Leslie 2121

Optional accessories: Leslie Cable, Stand, Adapter for stand

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