

FOR SALE.



Fully restored HAMMOND X-66 Organ with Leslie.



Hammond X-66 still in the workshop

This instrument is more than a basic Hammond X-66 console but is indeed a real piece of collection.

It took about two years to fully restore this organ in order to restitue its original 'out of the box' conditions as available in the sixties.

This X-66 organ is perfectly operating with its associated Leslie 145 and is in mint condition.

Description at a glance.

External aspect : (see photos on next page)

- the furniture has been refurbished entirely by a cabinetmaker, panels lacquered, including bench.
- all metal tubes have been re-chromed
- each key, tab and drawbar dismantled, cleaned and repolished
- special effect panel (right side) repainted and renovated
- pedal keyboard entirely dismantled, each pedal black repainted and renewed with new felts.

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Identification : Hammond X-66 Console - S/N 0047 – Version 2
Year of production : 1971
Genuine Hammond certificate available



X-66 Upper part : upper and lower manuals, drawbars, tabs



X-66 Bottom part : pedal keyboard and swell pedal.

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Foreword : all technical information concerning the complete restoration and MIDI implementation of this Hammond X-66 Console can be found on the website: <http://www.hammondx66.com> , select 'Restoring the X-66' and 'MIDI on X-66'.

Internal aspect :

- each circuit has been entirely checked individually.
- more than 600 electrolytic and tantalum capacitors replaced by professional grade quality
- all old noisy transistors from early silicon generation replaced by recent substitutes minimizing so the residual noise
- all Printed Circuit Boards (PCB's for short) of the Animation and Output sections redesigned and replaced with new components
- the Power Supply Unit (PSU for short) entirely rebuilt, reinforced, all filter capacitors replaced by professional grade quality
- all three scanners dismantled and cleaned, new belt
- each key-contact and busbar dismantled and cleaned with alcohol and lubricated adequately
- replacement of all defective or damaged cables carrying AC Mains notably
- all relays dismantled, cleaned and checked
- capacitors of all Tibia filters measured and replaced whenever needed
- Tabs switches cleaned and lubricated
- all arpeggiator contacts dismantled and cleaned (very delicate operation)

Additional features.

- **MIDI** is implemented on the Upper Keyboard (Contact-to-Midi system CTM-64 from Doepfer GMBH) with four MIDI OUT DIN sockets allowing direct connection of external MIDI expanders
- MIDI octave selector installed on Upper keyboard (one octave lower, normal, one octave upper)
- Swell pedal system (LDR system) replaced by LED and phototransistors in order to provide instantaneous response contrarily to original LDR system and DC voltage to drive external Voltage Controlled Amplifier (VCA) whenever needed.
- Built-in VCA output preamp driven by phototransistors installed on the swell pedal
- kick switch on swell pedal to control motor speeds of Leslie
- new lighting system for pedal keyboard
- four output sockets for connection of external audio mixer and power amplifier (Draw A, Draw B, Tabs and Reverb)
- direct connection of Leslie 147 via XLR (unbalanced) with built-in Leslie booster cancelling any hum induced by connecting cable. If needed, possibility of connecting balanced audio signals (Leslie 122 f.i) by adding one input transformer.

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- organ generator can be driven either via the original Top Octave Hammond Tone Wheel Generator (TWG) synchronized by AC Mains frequency or via built-in X-Tal generator providing better frequency stability and allowing operation so on both 50Hz or 60 Hz AC Mains frequency.
- built-in output booster
- stand-by power supply unit included with Solid State Relay (SSR) to improve reliability of the power switch and minimizing 'pop noise' at switching ON
- Output receptacle modified in order to meet European safety regulations
- Addition of protection fuses at PSU
- Vibrato Driver Board redesigned with less noisy and more reliable Si transistors
- Improved +28 Vdc voltage with stabilization circuit in the PSU to reduce residual hum level
- Addition of +/- 24Vdc and +/- 30 Vdc stabilized voltage in PSU for built-in Leslie booster and other preamp circuits.
- Bass Vibrato PCB redesigned entirely with new components improving distortion (THD) and minimizing noise
- Installation of new redesigned Scanner Recovery Preamps and Expression Preamps
- Installation of new redesigned Console Output preamp to drive the four external channels (connection with TC-1277 cabinets)
- Installation of VCA output (0Vdc to 10 Vdc) to drive external VCA module via swell pedal.
- Leslie speed control unit designed to also drive external Leslie simulators such as Neo Ventilator. LED indicator when on Fast speed.

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LESLIE 145.

*The Leslie 145 is identical to Leslie 147 except that the height of the 145 cabinet is 8" (20cm) lower.
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Foreword.

Connecting a Leslie tone cabinet to the X-66 Console is not easy since this organ was designed to be used specifically with TC-1277 Hammond tone cabinet. However, to my opinion, the 'doppler effect simulation' generated by TC-1277 cabinet is not at all comparable with the real Leslie effect provided by an original Leslie cabinet such as Leslie 122 or Leslie 147. That is the reason why TC-1277 concept has been definitively discarded.

However, based on numerous experiences conducted on that matter, it is strongly advisable to complement the Leslie 145 with an additional external audio system (audio mixer + power amplifier + speakers).

The combination of both static and rotary speakers provides the best sound reproduction system that really matches with the optimal performances of the X-66 Console.

More details on <http://www.hammondx66.com> > 'Restoring X-66' > 'Connecting Leslie cabinet to Hammond X66 Console'.

Summarized description.

External aspect :

- The cabinet has been entirely sandpapered and re-varnished providing a 'like-new' appearance.



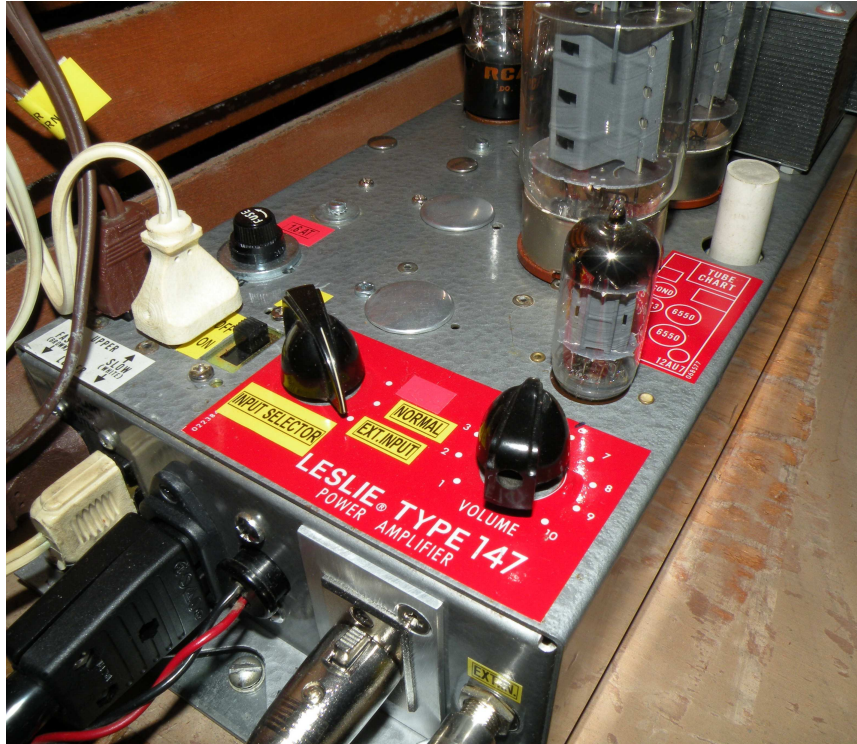
- Felt material installed inside the cabinet to damp inside reflections and to provide a more 'velvet' sound in the low-end part of the audio spectrum.



Internal aspect :

- L-147 power amplifier totally renewed with new tubes, new capacitors and resistors.
- Power output : 40.96 Wrms @ 1KHz (i.e.: 25.6 Vrms on 16 Ω resistive load).
- Input selector added allowing switching from direct link with X-66 Console or via external audio mixer.
- original 6-pin Amphenol plug removed and replaced by 5-pin XLR plug.
- 3-pin AC Mains socket installed for direct connection to AC Mains.
- Switching ON circuit activated by Solid State Relay (SSR) from X-66 Console.
- Ground selector added to cancel any ground loop problem in case of connection via external input.
- Solid State Relay installed avoiding so any clanky relay noise when switching the speed of motors. This SSR is controlled by opto-coupler also to eliminate any ground loop possibility (hum).
- All four motors dismantled, cleaned and lubricated, new belts, new grommets and new ball bearings.

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Rebuilt Leslie 147 Power Amplifier with adequate adaptations.

Identification: S/N FA-18594 – made by Hammond Organ UK - London

Original Leslie 145 Specifications.

- Physical sizes : High : 33" (84 cm)
Wide : 29 " (74 cm)
Deep : 20 ½ (52 cm)
Weight : 135 pounds (61 Kg)

- Loudspeakers : Treble : one compression-type driver, 16 Ω
Bass : 15 " woofer, 16 Ω

- Electrical : 230 V or 115 V @ 50 Hz
(for 60 Hz operation, two motor pulleys have to be changed).
Power consumption : 190 Watts, 1 ½ Amps (230V)

- Amplifier : 40 Wrms output @ 1 KHz

- Speed rotation: Slow : 0.8 RPS (1)
Fast : 6.6 RPS (1)
(1) Rotation Per Second

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Sales package

- **Hammond X-66 Console** will include :
 - bench (height is adjustable)
 - 25 notes pedal keyboard
 - spare belt for scanner
 - locking key
 - X-66 user's manual
 - CDR with service manual, schematic diagrams, full documentation on all modifications, improvements, video MIDI demo's, pictures taken during restoration, PowerPoint presentations made during X-66 conventions, X-66 history, X-66 service bulletins, etc...
 - set of cables : Power cable, Leslie cable
 - set of spare fuses

- **Leslie 145** tone cabinet will include :
 - power cable
 - CDR with service manual, full documentation on modifications and improvements, results of tests and measurements, pictures taken during restoration, etc..
 - spare fuse
 - 60Hz drum pulleys

Package price (X-66 + L145) : 8.500 €

Transport : not included

Dedicated export packaging : not included

Payment : via bank transfert before delivery or cash

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