

# UHL INSTRUMENTS X4 V



## Owner's Manual X4 V-1 / X4 V-2

# IMPORTANT SAFETY INSTRUCTION

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Please read the entire manual and the safety instructions. It contains all the information you need to use this unit. Don't skip any passages to ensure perfect operating of the instrument.



The product must be serviced by qualified service personnel only. **DANGER! Risk of electric shock.** Do not open the chassis. There are no user serviceable parts inside. The unit should only be serviced by qualified service staff.



Unauthorized opening of the chassis or malpractice of the unit will void warranty. The device may be used only to its intended usage. Please operate the instrument only according to these instructions.



## **Mains**

Before connecting the unit to the mains power supply, please check voltage. The unit can be powered with 100VAC up to 240VAC. Use the correct power cord. Do not use a damaged power cord or plug.



## **Humidity**

To reduce the risk of fire or electric shock, do not expose the unit to rain or moisture. Never place containers with liquid on the unit. Do not use the unit near water, e.g. swimming pool, bathtub or wet basement. If the unit is moved from a cold place to a warm room, condensation may occur inside. To avoid damage please allow the unit to reach room temperature before switching on.



## **Installation**

Always place the unit on a stable keyboard stand or table. Protect the unit from strong impact. Do not drop it!



## **Cleaning / Maintenance**

Never use any abrasive detergent, which may damage the surface. We recommend a slightly moist micro-fibre cloth. Do not allow any liquids (water, soft drinks, etc.) to penetrate the unit.



## **Packaging**

Please keep all packaging, and use it to protect the keyboard when transporting, e.g. if servicing is required.

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# Introduction

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Thank you very much for choosing an Uhl-Instruments X4 V-1 or X4 V-2. You have obtained a state-of-the-art model of a vintage organ. We recommend that you read the entire manual carefully to take full advantage of all the functions of your new Uhl-Instruments X4 V. Please keep this manual for later reference. We also recommend you to keep all packaging to protect the instrument if transporting is required.



X4 V-1 and X4 V-2 have identical connection jacks and controls. Hence both models are referred to under the name X4 V in the following.

## X4 V Overview

The HOAX sound engine of the Uhl-Instruments X4 V organs fully matches the vintage electromagnetic organ sound, including rotary cabinet, spring reverb and pedal sustain. This sound engine features completely new principles of electronic sound generation. An exact physical model of the famous vintage organ delivers the most authentic organ voices imaginable. It doesn't use computers, signal processors, sample players or analog electronics. Instead, the layout of vintage organs has been transferred to a detailed physical model. HOAX does not emulate the sound; it rather **creates** the sound in real-time – just like real magnetic wheels.

The percussion has that gorgeous round wooden "clonk" (remember "Child in Time"?). The smacking produced by the tone generator gets under your skin, especially in connection with percussion on. We recreated even the smallest details of the finest sounding vintage organs. No computers, no samples and no DSPs are used to comprehensively mimic all the characteristic sound details. To take a single example: the Chorus/Vibrato can't be distinguished. No wobbling! Switch it on and enjoy that silky C/V shimmer, long-desired by clonewheel players.

The innovative sound generation boast a great number of advantages: there is absolutely no perceivable key-to-audio latency since the 91 magnetic wheels are continuously running, just like in a magnetic wheel generator. Polyphony is unlimited. No lost notes, even if all keys are pressed simultaneously. And the total absence of unwanted phase relations between the magnetic wheels makes the sound of the Uhl-Instruments X4 V so incredibly lively and natural.

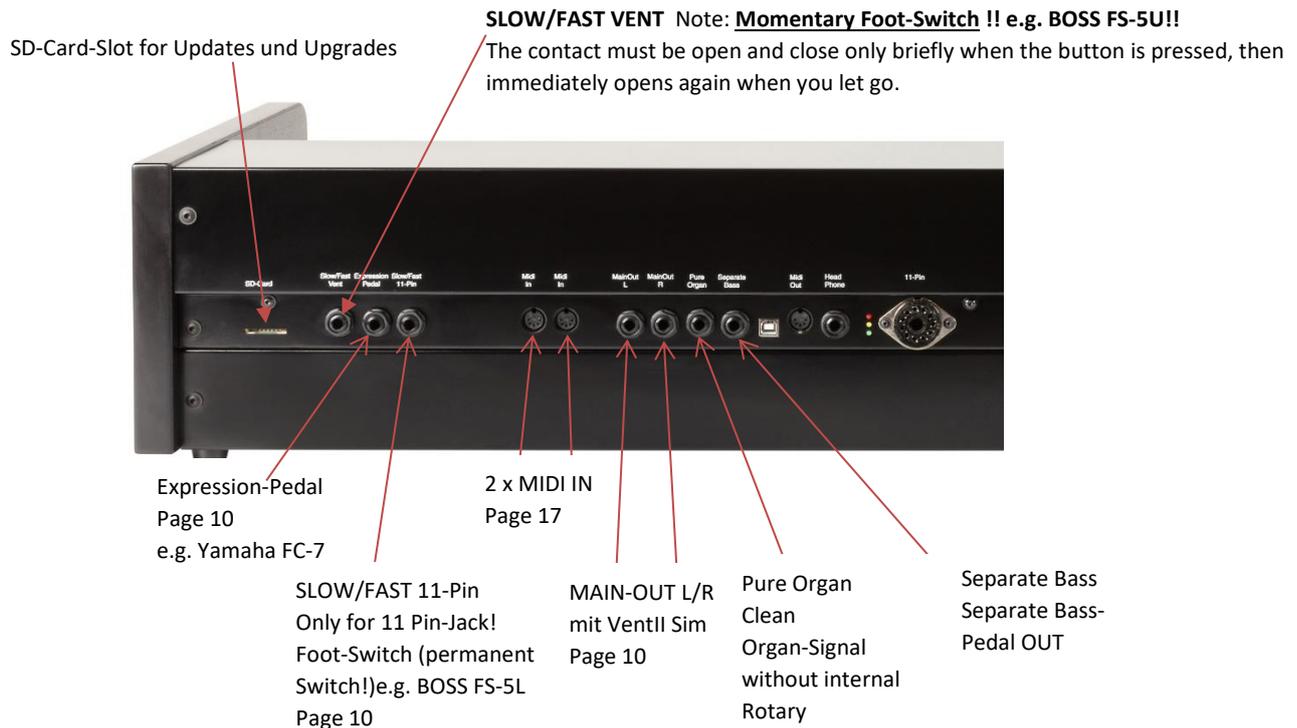
All the sought after „shortcomings“ were taken over as well:

Leakage /crosstalk, magnetic wheel slip and flutter, harmonic distortion and output voltages of pickups and filters - and of course the typical „keyclick“. The X4 V keyclick is not just an added noise signal. It is dynamically produced by random "chatter" of key contacts, dependent on key velocity. Other features are: Chorus/Vibrato based on a digitally recreated LC delay line, Percussion in all variations, foldback and precise tapering. Drawbar response is immediate and responsive, just like a vintage organ.



**Warning! Playing an Uhl X4 V organ is highly addictive!**

# Backpanel Connections



**Updates/Upgrades SD-Card-Slot:** For updates and upgrades. No PC or MAC is needed. For updates or upgrades, the customer may receive an SD card with the new firmware sent by post. When the organ is switched off, the SD card is inserted into the slot - switch on the organ - the update / upgrade starts automatically.

The course can be followed on the display of the organ - Ready after about 2-3 minutes - switch off the organ - remove SD card - turn on the organ again - done.

Crashes due to wrong Windows versions, MAC, broken USB cables, viruses, etc. are therefore excluded.

The USB socket of the UHL X4 V is sealed it is used exclusively for service work on the part of the manufacturer. Removing the USB cap can void the manufacturer's warranty.

## **SLOW/FAST VENT: Note: Momentary foot-switch !! e.g. BOSS FS-5U!!**

The contact **must be open** and close only briefly when the button is pressed, then immediately opens again when you let go.

**Expression-Pedal:** The pedal jack can be used with a Yamaha FC7 or similar expression pedals.

**SLOW/FAST 11 PIN-Buchse !!:** Supports latch mode footswitches with stereo plugs. Momentary switches are not supported. Pin configuration: Tip = SLOW/FAST, Ring = RUN/STOP  
e.g. Boss FS-5L.

**2 x MIDI IN:** These inputs can be used to connect a controller keyboard for Lower Manual (Midi channel 2) and a Midi pedal for pedal bass (Midi channel 3).

**Main-OUT L + R:** Standard audio output (Stereo)for standard instrument cables (TS Male ¼) included Ventilator II Rotary-Simulation.

**Pure Organ:** Clean Organ-Signal without internal Rotary.

**Separate Bass:** Separate bass pedal: Here only the signal from the bass pedal is output and can thus be optimally mixed via a mixer. In this case, the signal from the bass pedal can be separated from the other outputs (Main-Out, Pure Organ and 11 PIN Rotary Socket) with the "Sep." button (see page 14).



**USB:** The USB socket of the UHL X4 V is sealed - it is used exclusively for service work on the part of the manufacturer. Removing the USB cap can void the manufacturer's warranty.

MIDI-OUT  
Page 18

Phones  
Page 10

11-Pin  
Rotary Jack  
Page 10

**USB:** The USB socket of the UHL X4 V is sealed - it is used exclusively for service work on the part of the manufacturer. Removing the USB cap can void the manufacturer's warranty.

**MIDI-OUT:** The X4 V can be used as a velocity sensitive controller keyboard. External sound modules or synthesizers can be played together with the organ sound of the X4 V.

**PHONES Jack:** This is a stereo jack for connecting headphones.

**11-Pin Rotary Jack:** For connection of an external rotary cabinet (see page 10)

**Power Switch 100V-240V 50-60 HZ** (see Page 8)



Power Switch

2 Fuses  
a 800 mA

AC IN 100-240 V 50-60 HZ

# Connecting the Power Cable

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The X3 runs on AC power: 100, 120, 230, or 240 volts at 50–60 Hz. The voltage level is set automatically. Make sure the X4 V power switch is set to off before you connect the power cable. Plug the cable into a grounded outlet only.

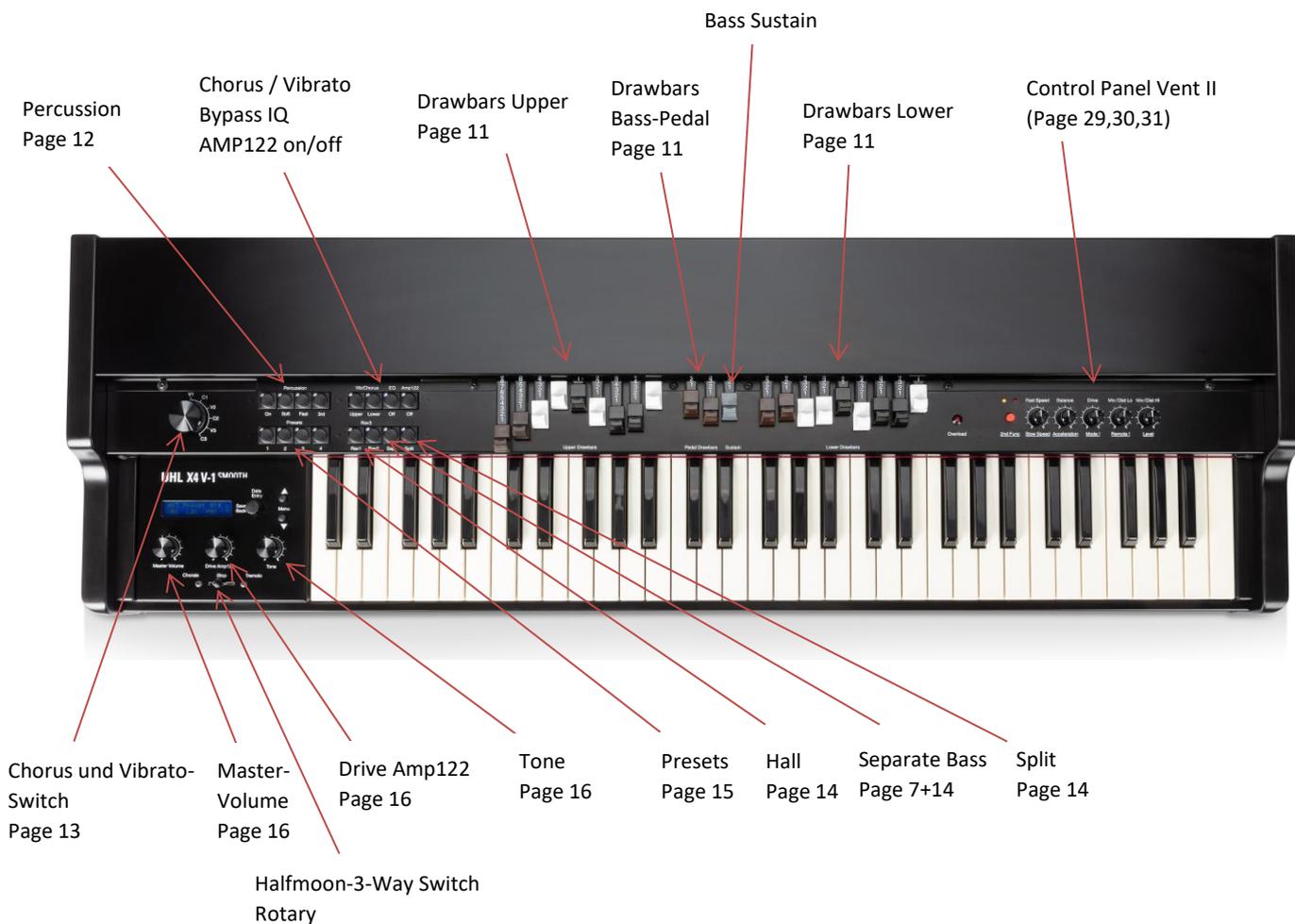


Make sure that your power outlet delivers an appropriate voltage level as described above.



The power cable may vary according to the country where you bought your X4 V. Do not manipulate the cable or plug. If your power source does not have a standard grounded outlet, you should have a proper grounding system installed by an expert before using the X4V. This will reduce the risk of a shock.

# Console



# Startup

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## Connecting the Power Cable:

Make sure the power switch (see page 7) is set to OFF before you connect the power cable at the X4 V. Plug the power cable into a grounded outlet only.



The X4 V runs on AC power: 100, 120, 230, or 240 volts at 50–60 Hz.

## Audio Connections

Make sure your sound system is at a safe volume level. Also make sure that the X3's VOLUME knob (on the far left side of the front panel) is all the way down.

Plug in a pair of stereo headphones or run two standard 1/4-inch instrument cables from the MAIN outputs of the X4 V to your amplifier or mixer for stereo included Rotary Sim Vent II.

## 11-Pin Rotary Output:

The X4 V is designed to connect with a 11-pin rotary speaker cabinet. When a physical rotary speaker is connected via the 11-pin plug, the [RUN] and [SLOW/FAST] control buttons perform the same functions as with the internal rotary simulation. The rotary speed can also be controlled with a foot switch like e.g. a BOSS FS-5L (latch mode switch with stereo TS ¼ inch plug only! See page 6).

## Volume/Expression-Pedal Input

Connect an expression Pedal like the Yamaha FC7 or similar (10k to 47k) here to control organ volume while you are playing (see page 6).

## Foot Switch Input - Slow/Fast Vent II (Slow/Fast Vent Jack)

**Note: Momentary Foot-Switch !! e.g. BOSS FS-5U!!**

**The contact must be open and close only briefly when the button is pressed, then immediately opens again when you let go (see Page 6)**

# Controls

## Drawbars



9 Drawbars Upper-Manual  
16" 5 1/3" 8" 4" 2 2/3" 2" 1 3/5" 1 1/3" 1"

2 Drawbars Bass-Pedal  
16" 8"

Sustain  
Bass-Pedal

9 Drawbars Lower-Manual  
16" 5 1/3" 8" 4" 2 2/3" 2" 1 3/5" 1 1/3" 1"

The X4 V organ has 2 sets of nine drawbars, one for the upper manual and one for the lower manual plus 2 drawbars for the bass pedal. A third bass pedal drawbar controls sustain of the bass sound. The drawbars are used for adjusting the basic harmonics of the X4 V. This offers a wealth of sound shaping options. All 9 drawbars pulled out results in 9 different harmonic tones per key.

## Percussion



Percussion: ON/OFF   SOFT   FAST   3 RD

Percussion changes the attack characteristic of a note by adding an percussion signal to the note that is played. The volume of the percussion is adjusted by the SOFT button. Decay of the percussion signal depends on the FAST button setting. Frequency is selectable to be either the 2nd or 3rd harmonic of the played note. Percussion is "single triggered". To hear the percussion effect for every note requires that the currently pressed key is fully released prior to playing the next one. The percussion can only be enabled on the upper manual. All percussion parameters like volume, decay are programmable in the Menu/Display panel (see page 27).

## Chorus/Vibrato



Sixfold Rotary Switch  
VIB/Chorus

VIB/Chorus  
Upper

VIB/Chorus  
Lower

Rotary switch is used for selecting one of the six effects vibrato V1, V2, V3 or chorus C1, C2, C3. The two push-buttons Vib/Chorus Upper and Lower are used to switch the effect on/off, either for the upper or lower manual. Ex-factory the Vib/Chorus parameters are set according to a real vintage organ. All Vib/Chorus parameters are programmable in the Menu/Display panel (see page 27).

## EQ-Bypass, Drive Amp122-Bypass



EQ-Bypass

Drive Amp122  
Bypass

**EQ-Bypass:** The EQ (equalizer) set in the display is switched off here. This is also very helpful when setting the EQ. The change can be heard or checked in one click.

**Drive Amp 122 Bypass:** The overdrive sim is completely deactivated. The organ sounds a bit cleaner then.

## Reverb, Separate Bass, Split



**Sep.** (Separate bass): The pedal bass is always separately available at the "Separate Bass" output socket on the back of the organ. With the "Sep." button you can switch off the pedal bass at the outputs "Main-Out L + R", "Pure Organ" and "11-Pin". The pedal bass is now connected to the mixer via the "Separate Bass" output. Now you can mix the Pedalbass completely detached from the rest of the organ (volume, possibly EQ).

REV1   REV2   REV3 (REV1 + REV2)   SPLIT

### Reverb:

The X4 V features a well-balanced reverb which emulates a vintage spring reverb.

There are four reverb levels available: OFF, REV 1, REV 2 and REV 3.

To activate the reverb press one of the buttons [REV1] or [REV2]. To obtain reverb level REV3 both buttons [REV1+ REV2] must be pressed simultaneously. The individual levels of REV1, REV2, and REV3 can be adjusted to taste in the Menu/Display panel (see page 23).

### Split-Mode:

Keyboard split is available for the lower or upper manual with a selectable split point. Two keyboard zones are easily set up by assigning any desired key split zones.

**Lower to Upper: Lower to Upper:** Press the key of the desired split point on the upper manual, hold while pressing the [Split] button. Now the left part of the keyboard plays the Lower Manual. Use the right-hand drawbars to adjust the Lower Manual sound.

**Pedal to Upper:** Press two adjacent keys at the desired split point on the upper manual, hold both keys while pressing the [Split] button. Now the left part of the keyboard plays the Pedal Bass. Use the Pedal Bass drawbars to adjust the Pedal Bass sound.

**Pedal to Lower (X4 V-2 only!):** Press two adjacent keys at the desired split point on the lower manual, hold both keys while pressing the [Split] button. Now the left part of the lower keyboard plays the Pedal Bass. Use the Pedal Bass drawbars to adjust the Pedal Bass sound.

**Note:** see also „Split-Mode“ on Page 25

## Common-Presets

The X4 V provides 14 common presets. All settings of a sound are stored in these presets, such as percussion, chorus/vibrato, reverb, split . If none of the four LEDs is lit, the "live" setting is selected which means that drawbars and buttons are used to adjust the sound. When pressing a preset button the stored preset sound is recalled. Pressing the button again switches the X4 V back to "live" setting.



14 „Common“ Presets (mit Taster 1 – 4)

### Storing a preset:

After you adjusted a sound to your liking press a preset button of your choice and keep it pressed until the LEDs of all preset buttons start blinking. Then release the button. Your preset is now stored and can be recalled with the respective button.



### Common-Presets:

The number of common presets is derived from different combinations of the 4 preset buttons. Up to 3 button can be pressed simultaneously to store and recall a preset:

Example 1: The preset named 1 is button 1.

Example 2: The preset named 32 is a combination of the buttons 3 + 2.

Example 3: The preset named 23 is a combination of the buttons 2 + 3.

In total there are 14 presets available.

### What is stored in a common preset?

Drawbar settings (upper, lower, pedal)

+ Settings of percussion, reverb, chorus/vibrato, split

## Master Volume, Drive Amp122, Tone, “Halfmoon-Switch”



**Master Volume:** If, for example, the overdrive control "Drive Amp122" is turned up, the overall level becomes considerably louder. This can also lead to the override of the Vent II. In this case, the "Overload-Led" lights up. This too high level must then be adjusted with the master volume control (turn to the left).

**Drive Amp122:** In addition to the accurate rotary simulation the X4 V also features a separate 122 amp output. It emulates the sound and characteristics of the 12BH7 tube and the two 6550 tubes. The tube amp overdrive starts from the center position of the volume control. Turning the volume control clockwise adds more harmonic tube overdrive.

**Note:** Drive Amp122 combined with the Drive of the Vent II brings finest and great overdrive results!

**Tone:** Cranked up high frequencies accentuate the key click and percussion. Turn the knob counter-clockwise to reduce high frequencies.



Note: It is recommended to discreetly dial back the high frequencies if the X4 V is played with very high volume levels during live performance.

**„Halfmoon-Switch“:** The "rotors" of the internal Rotary Vent II, as well as those of an external Rotary cabinet connected to the 11pin socket, are controlled with the left hand (Slow, Stop, Fast) with this triple knob.

# MIDI

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## MIDI-IN (2x)

The two Midi inputs can be used to connect a controller keyboard for Lower Manual (Midi channel 2) and a Midi pedal for pedal bass (Midi channel 3) to obtain a fully fitted magnetic wheel vintage organ.

Example X4 V-1:



### To play the „Lower“ of the X3-1:

Connect a MIDI-Keyboard to one of the both MIDI-IN-Sockets of the X3-1. To play the Lower select MIDI Channel 2

### To play the Pedal-Bass of the X3-1:

Connect a MIDI-Keyboard to one of the both MIDI-IN-Sockets of the X3-1. To play the Lower select MIDI Channel 3

Example X4 V-2:



**To play the Pedal-Bass of the X3-2:**  
 Connect a MIDI-Keyboard to one of the both MIDI-IN-Sockets of the X3-1. To play the Lower select MIDI Channel 3

## MIDI-OUT



MIDI-OUT

The Midi-Out can be used to connect a sound module or synthesizer which then can be played together with the organ sound of the X3. This way the X3 can be used as a velocity sensitive controller keyboard.

## Local On/Off

Normal setting All ON.

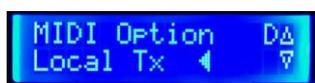
When playing other sound generators via MIDI Out you can mute individual parts of the organ. Example: The Lower Manual is intended to play an expander with an e-piano sound without its own organ sound. For this, the Local On/Off in would have to be set to "Upr+Ped ON".



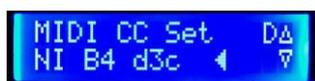
## MIDI Konfiguration Menu-Display



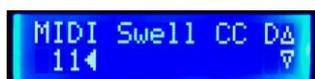
sets MIDI base receive channel 1 to 10 (upper manual, lower manual is on +1, pedals on +2). ☒



sets MIDI routing behaviour to: Local Tx – own MIDI events are sent on MIDI OUT , Inp 1 Thru – MIDI IN 1 is routed to MIDI OUT as THRU, Inp 2 Thru – do not use, USB InThru – USB MIDI IN is routed to MIDI OUT as THRU



sets recognized MIDI CC set to NI B4 d3c - Native Instruments B4, Doepfer d3c controller (default), and others...



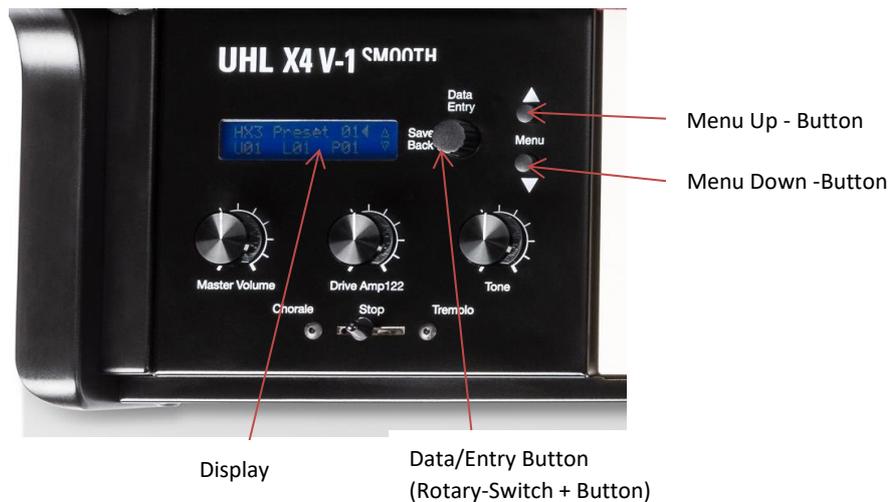
sets accepted swell/expression CC number (default #11).



sets accepted overall volume CC number (default #7).

# Menu/Display

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## Menu Panel Display Controls

The menu panel display offers full access to many X3 parameters like percussion, chorus/vibrato, keyclick, reverb, factory presets, leakage, tapering. All parameters can be stored individually.

Use **Up/Down buttons** to scroll through menu items.

Use the **Data Entry** incremental encoder knob to change parameter values by turning the knob either right or left. A changed parameter is indicated by an asterisk in the display. To **store** changed settings **press the Data Entry** rotary knob for 2 seconds until the [Saved] message appears. Hereafter the asterisk disappears.



If you change more than one parameter, every single parameter change must be stored individually. To find parameters which have not been stored, just use the Up/Down buttons to scroll through the complete menu and look out for asterisks. Then press the Data Entry knob for 2 seconds to permanently store each parameter still showing an asterisk.

## Save Mode



Target: more reverb on Reverb 1



Turning the Data / Entry knob to the right makes the reverb longer

The change is indicated by an asterisk \*



Pressing and holding (2 sec) the Data / Entry button will save the newly set value



The new "Reverb 1" is saved. The star is no longer displayed

Press the Data Entry knob for 2 seconds to permanently store parameter changes. The asterisk disappears after saving.

## Live-Preset

After switching on the X4 V, the following message appears on the display (the current real drawbar positions are played):



## Factory-Presets

The X4 V has 14 factory presets each for the Upper Manual, Lower Manual and Pedal Bass.

Turn the rotary knob to access the various factory presets.

For example: Call up the factory preset "01" - turn the knob one grid to the right:



## Change Factory-Presets

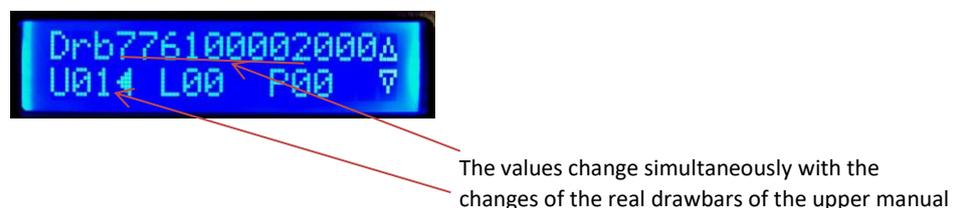
The factory presets can be changed individually and replaced by their own factory presets.

In the example factory preset "01" should be changed. Only the drawbar settings of the upper manual should be changed. First call up the factory preset "01" (turning the knob one grid to the right):

By pressing the "Menu Down" button once you get to "U01" (default drawbar settings of the Upper Manual):



Now set the real drawbars of the Upper-Manual as desired. The changes in the drawbars are shown in the display behind Drb (Drawbar):



Saving the Upper Drawbar Positions in the Factory Preset "01"

Pressing and holding (2 sec) the Data Entry button will again ask if and how to save:



Press the Data Entry button again to save the changes:



In this way, all preset values of the factory presets can be changed.

### Reverb Group (Hall)

The reverb menu can be used to adjust the individual levels of REV1, REV2, REV3.



Length Hall 1



Length Hall 2



Length Hall 3

## Parametric Equalizer Group



Bass EQ – set here neutral



Parametric Mid EQ - raised by approx. 5dB here



The frequency (Mid's), which should be changed, can be shifted very far from approx. 200 Hz to 4000 Hz. Here about 800 Hz



Here, the width of the increase or decrease of the Mid's is set



Treble EQ - here lowered significantly

## Transpose



Transpose function offers either 6 semitones down or 7 semitones up.

 Annotation: only 5 octaves are possible. Transpose cannot generate tones outside these 5 octaves.

## Split Mode

Note: see also Split-Functions page 14

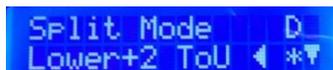
5 Options:

**PedalToLower** on the lower (X3-2) press a key at the desired split-point - hold the key and simultaneously press button "Split"  
(Split-LED lights) **Note: Great Sound for Lefthand-Bass!!**

**LowerToUpper** on the upper press a key at the desired split-point -- hold the key and simultaneously press button "Split"  
(Split-LED lights) The only makes sense at X3-1.

**PedalToUpper** on the upper press two key's side by side at the desired split-point -- hold the key's and simultaneously press button "Split"  
(Split-LED lights) The only makes sense at X3-1. **Note: Great Sound for Lefthand-Bass!!**

Lower+1 ToU  
Lower+2 ToU



Lower+1 ToU = LowerToUpper but **1 octave higher**

Lower+2 ToU = LowerToUpper but **2 octaves higher**

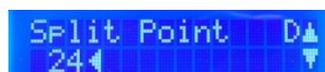
(The only makes sense at X3-1, if you would play full cords instead of Lefthand-Bass)

**Attention:** Here first specify the split point on the display:

Then, for example select Lower + 2 ToU the display.

Then activate the split with the "Split" button

(Split-LED lights)



## Generator Group

The generator menu can be used to adjust typical generator settings

TG CapSet DΔ  
Year 1961Δ

Cap-Set - Generator (6 Presets)  
Year 1955, Year 1961, Year 1972, Recapped, Straight, Cheesy

TG GearsTune Δ  
A=440Δ

Fine-tuning, for example - tune to 443 Hz

TG GearsTune Δ  
A=443Δ

TG Flutter DΔ  
3Δ

Slip and mechanical balance of tone Wheels

TG Leakage DΔ  
4Δ

Leakage

ContSpringFlx DΔ  
5Δ

Key-Click Frequency (Tone)

ContSpringDmp DΔ  
7Δ

Key-Click Length

No DB1 @Perc DΔ  
OFFΔ

Disabled drawbars 1 "when Percussion is enabled (ON Pos.)  
In pos. OFF works drawbars 1 "despite active percussion

DB16 Foldback DΔ  
Foldback Δ

Harmonic foldback 16 "1 octave repeats (4 presets)  
Foldback, Full, Foldb muted, muted Full

SwellTrimCap DΔ  
█ [-----] Δ

Simulates the tuning capacitor in the foot swell  
Higher value = more volume with fine Overdrive

Minimal Swell DΔ  
7Δ

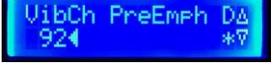
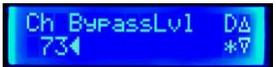
Residual volume when the Expression-Pedal is completely withdrawn. The value should not be set to "0", because the frequency response of the organ is also changed with the volume (like the original)

A028 TubeAge DΔ  
15Δ

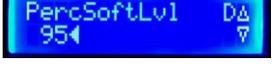
Simulates aged tube (higher triode distortion)

## Vibrato / Chorus Group

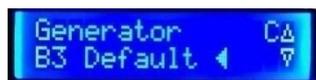
Detailed modelling of scanner vibrato features lots of adjustable parameters. Avoid randomly changing parameters; they are intended for real organ enthusiasts – you should know what you're doing.

	Adjusts scanner drive gear and thereby vibrato frequency
	Adjusts leakage of higher notes in scanner compartment due to parasitic capacitances.
	Adjusts amplitude modulation caused by delay line on all vibrato/chorus knob settings.
	Adjusts treble increase when vibrato/chorus is switched on. Effect on chorus is obvious, while increase on Vibrato is more subtle.
	Sets amount of reflected signal on LC linebox due to aged caps. Higher values lead to a ,celeste'-like effect as found on model M100.
	Sets upper frequency response of LC linebox.
	Adjusts ,wet' modulated amount when in chorus mode.
	Adjusts ,dry' unmodulated amount when in chorus mode.

## Percussion Group

	Adjusts percussion level in PERC ON, NORMAL tab setting.
	Adjusts percussion level in PERC ON, SOFT tab setting.
	Adjusts percussion decay rate in PERC ON, SLOW tab setting (higher value = faster).
	Adjusts percussion decay rate in PERC ON, FAST tab setting (higher value = faster).
	Sets drawbar muting amount while in Perc NORM. No mute will happen if value set to 125.
	Sets percussion circuit recovery time; if set to lower values, staccato notes yield muted percussion.

## Generator-Modelle



B3 default (91 tones sound generator)



B3 old (as above, but more leakage, stronger key click)



M3/M100 (no foldback for higher tones)

# Internal Rotary Ventilator II

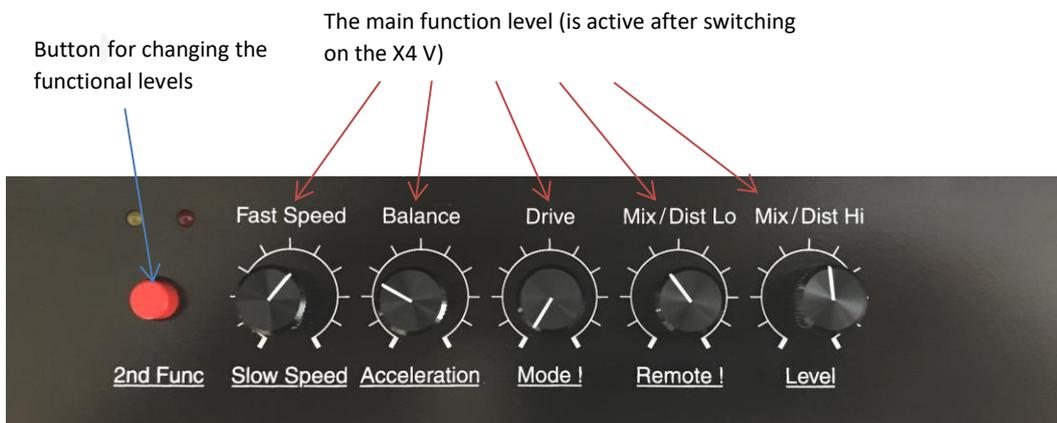
Ventilator II has five knobs to control various parameters of the effect. Each controller has 2 functions. There are 2 levels of functionality:

-Main functional level (label above the pots).  
This level is active after switching on the organ.

Secondary function (underlined caption below the pots).

To switch between the functional levels, press the red "2nd Func" button.  
Activation of the secondary functions is indicated by flashing Speed LEDs (2x per second).  
To return to the main functions, press the "2nd Func" button again.  
The settings of the secondary functions are saved and remain even after switching off the organ.

## Potentiometer Main Functions



**Fast Speed:** The Fast Speed knob adjusts the bass and treble rotors' speeds while the unit is in FAST mode. Twist the knob to the far left for slower speeds and to the far right for faster speeds:

FAST Bass 2,60Hz – 7,8Hz (6,5Hz) Horn 2,72Hz – 8,16Hz (6,8Hz)  
In Stellung 2.00 Uhr (Werte in Klammern) entsprechen die

**Balance:** The Balance knob adjusts the relative volumes of the bass and treble speakers. Use it much like you would an equalizer, adapting the unit's sound to suit different types of input signals and the musical context, amp, or monitor.

Twisting it to the right from the 12 o'clock position cuts low frequencies; turning it to the left cuts higher frequencies.

**Drive:** This knob activates VENTILATOR II's on-board tube simulator. To make the most of the Drive section, ensure you dial in the optimum input level as described in the section above entitled Overload LED. Then set the instrument's volume to the maximum level and twist VENTILATOR II's Drive knob to dial in the maximum distortion level. This lets you ride the instrument's volume pedal or knob to control the amount of saturation, which is a convenient and musically expressive way of modulating between clean and distorted sounds on the fly. The Drive section is level-compensated; that is, the output level does not change much as you turn up the Drive knob.

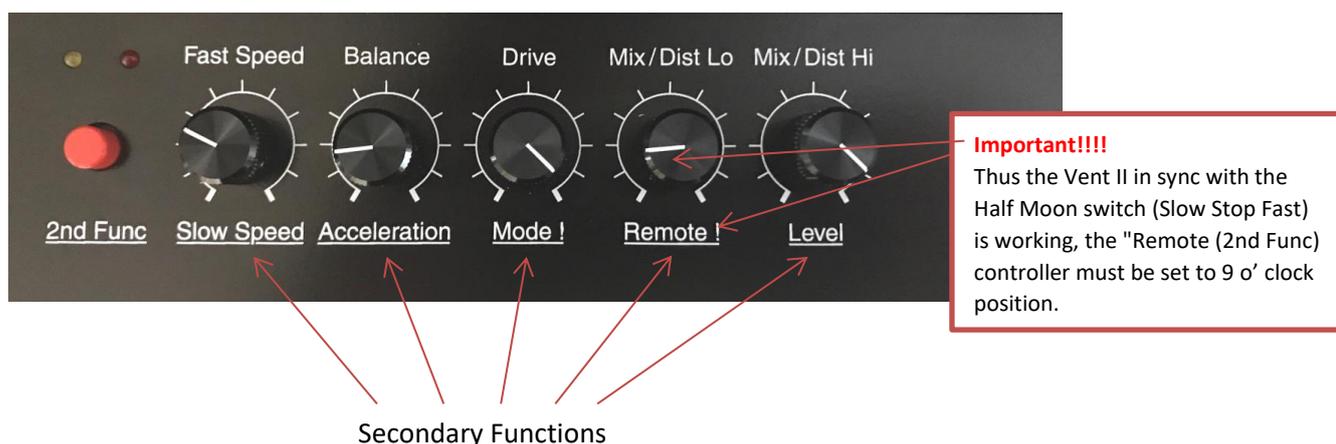
**Mix/Dist Lo:** This controls the mix of the lower rotor in the signal as well as the distance of the virtual mic from the rotor. The first half of the travel (from all the way counter-clockwise to center) determines the mix. At 7 o'clock (all the way counter-clockwise) there is no lower rotor simulation in the mix. Note this does not remove the bass content from the signal; it simply removes the rotary effect. You can use this to emulate the classic "Memphis style" Rotary sound. The "Memphis style" on a real Rotary is achieved by unplugging the motors on the lower rotor, so that only the upper rotor spins.

From center to 5 o'clock (all the way clockwise), the knob adjusts the distance of the virtual mic from the lower rotor. This is handy for decreasing the amount of AM (amplitude modulation) in the signal. Pulling the mic further back decreases the "wub wub wub" effect that can be distracting, especially when you're playing left hand and/or pedal bass.

**Mix/Dist Hi:** As with the MIX / DIST LO knob, this controls the mix of the upper rotor in the signal as well as the distance of the virtual mics from the rotor. The first half of the travel (from all the way counter-clockwise to center) determines the mix. At 7 o'clock (all the way counter-clockwise) there is no upper rotor simulation in the mix. Instead you'll hear the direct input signal (in stereo if both jacks are used).

From center to 5 o'clock (all the way clockwise), the knob adjusts the distance of the virtual mics from the upper rotor.

### Pots Secondary Functions



**Slow Speed (2nd Func):** The Slow Speed knob adjusts the bass and treble rotors' speeds while the unit is in SLOW mode. Twist the knob to the far left for slower speeds and to the far right for faster speeds:

SLOW  
 Bass 0,12Hz – 2,51Hz (0,76Hz)  
 Horn 0,13Hz – 2,62Hz (0,8Hz)

The 10 o'clock position yield the values shown in brackets, which correspond to the speeds of an average 122 model Rotary.

### **Acceleration (2nd Func):**

This knob adjusts the amount of time it takes both rotors to go from slow to fast and from fast to slow. Set the knob to the far left for the fastest acceleration and deceleration time. Twist it to the right and the effect will be slower to speed up and slow down. The 1 o'clock positions yield the values shown in brackets, which correspond to the speeds of an average 122 model Rotary.

#### **SLOW > FAST**

Bass 0,5sec – 4,2sec - 8sec – 8sec (5,5sec)

Horn 0,5sec – 0,5sec – 2sec - 8sec (1sec)

#### **FAST > SLOW**

Bass 0,8sec – 4,2sec - 8sec – 8sec (5,5sec)

Horn 0,8sec – 0,8sec – 3,2sec - 8sec (1,6sec)

### **Mode (2nd Func):**

The VENTILATOR II features three different frequency responses for the use with guitar or organ. They are accessed via the 7 – 12 – 5 o'clock position of the MODE knob.

#### **Pos Mode Functionality**

7.00 neutral response

12.00 similar to 7:00 but with accentuated Mids and Highs

**5.00 KEY Simulation of the Rotary 122 response =X4 V Factory Setting !!**

### **Remote (2nd Func):**



#### **Important!!!!**

Thus the Vent II in sync with the Half Moon switch (Slow Stop Fast) is working, the "Remote (2nd Func) controller must be set to 9 o'clock position.

**Level:** Determines the output volume, the controller can be set to position 5:00 o'clock.

## Overload-LED



Overload-LED

The overload LED lights up when the Vent II is overdriven!!!!!!

This situation should be avoided, as otherwise inharmonious cliffs negatively affect the sound.

In the state of the organ is actually only if you turn up the Drive Amp122, so here how to work with the "Drive Amp122" and the "Master Volume control":

With the "Master Volume", the overall volume can be withdrawn or adjusted. If, for example, the overdrive control "Drive Amp122" is turned up, the overall level becomes considerably louder. This can also lead to the override of the Vent II. In this case, the "Overload-Led" lights up. This too high level must then be adjusted with the "Master Volume" control (turn to the left).

**Drive Amp122:** The Amp122 is a complex overdrive. The "characteristics and peculiarities" of the 12BH7 and the two 6550 Tubes were perfectly reproduced. The beginning and the intensity of the overdrive depends on how far and how many drawbars are pulled, while the position of the Expression-Pedal has great influence (as in the Original). It takes some practice to properly master the overdrive.

If the amount of distortion is high, use the Master Volume knob to decrease the overall level - the Overload LED should not light steadily.

**Tip: "Drive Amp122" combine with the "Drive" of the Vent II - brings finest and perfect Overdrive results!**