nord electro 4 HP
HAMMER ACTION PORTABLE

nord electro 4
SEMI WEIGHTED WATERFALL SW73

User Manual
Nord Electro 4 HP
Nord Electro 4 SW

OS Version 1.1x

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Warning - When using electric products, basic precautions should always be followed, including the following:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Additional Safety Information

No naked flame sources, such as lighted candles, should be placed on the apparatus;

Do not use the apparatus in tropical climates.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

The maims plug is used as the disconnect device and shall remain readily operable.

Il convient de ne pas placer sur l´appareil de sources de flammes nues, telles que des bougies allumées;

L´appareil n´est pas destiné á étre utilisé sous un climat tropical.

L´appareil ne doit pas étre exposé á des égouttements d´eau ou des éclaboussures et de plus qu´aucun objet rempli de liquide tel que des vases ne doit étre placé sur l´appareil.

Lorsque la prise du réseau d'alimentation est utilisée comme dispositif de déconnexion, ce dispositif doit demeuré aisément accessible.

Nord Electro 4 HP/SW User Manual

1 Introduction

Thank you!

We'd first like to thank you for purchasing the Nord Electro 4 HP/SW. Our goal when we developed the Nord Electro instruments was to create the best emulations of traditional electromechanical keyboard instruments on the market, and to make these instruments compact and lightweight. With the Electro 4 HP/SW we have taken our commitment a step further, by upgrading the organ, the piano and the effects sections and also by the ability to use sampled instruments from the Nord Sample Library in the Nord Electro 4 HP/SW.

This allows us to e.g. include some of the fabulous Mellotron sounds in the factory sound bank. Each and every piano and sample in the Nord Electro 4 HP/SW can be replaced by you, using the free Nord Sound Manager application. New pianos and other sounds are found on the enclosed Nord DVD and on the www.nordkeyboards.com web site.

A recennt addition to the Electro models is the Electro 4 HP with a keybed that has a weighted hammer action in a very light-weight package.

No compromises, just a good selection of outstanding, classic keyboard sounds with true feel, from a natural keyboard response to the authentic sound quality – that is what we have been pursuing during the development. To make a great tool you have to put all the focus on a few things and that is exactly what we tried to achieve. We hope that you will have as much fun owning and using the instrument, as we had developing it.

About this manual

You are probably very eager to start using your new instrument, and we sure don't want to keep you from having fun. We will try to cover all the essential aspects on how to use the Electro 4 HP/SW in the very first few pages of this manual. After that follows the reference section where all the functions are explained in detail.

Disclaimer

All trademarks and brand names mentioned in this manual are the property of their respective owner's and are not affiliated or associated with Clavia. These trademarks and brand names are only mentioned to describe the types of sounds reproduced by Nord Electro 4 HP/SW.

OS and internal memory

The operating system, programs and pianos and samples in Nord Electro 4 HP/SW are stored in a Flash memory. A Flash memory keeps the data also when the power is turned off. Another big advantage is that you will be able to download OS upgrades, pianos and samples and programs to your Nord Electro 4 HP/SW from a computer. The Nord Electro 4 HP/SW features a USB port for quick and easy download of new piano and/or instrument samples.

Factory presets

The program memory of Nord Electro 4 HP/SW consists of 128 programs. In addition there is the Live buffer memory, which will continuously store any changes as they are made, and remember these settings after the power is turned off.

All of the 128 factory Programs of Nord Electro 4 HP/SW can be replaced. To make sure you don't accidentally overwrite Programs you want to keep, it's a good idea to back up your sounds regularly on a computer using the Nord Sound Manager application.

Restoring the factory presets

The factory Programs are available as Nord Sound Manager backup files for download at the Nord web site at www.nordkeyboards.com or on the included Nord DVD.

OS upgrades

The latest OS version for Nord Electro 4 series is available for download at the www.nordkeyboards.com website.

2 Overview

The front panel of the Nord Electro 4 HP/SW has four main areas, Organ, Piano, Program and Effects. We'll familiarize ourselves briefly with the panel here and describe the functions in detail in the following chapters.

On the left part of the panel is the Master Level knob, the organ model selector and the Rotary Speed section. The Master level controls the entire instruments output level at the two output jacks and the headphone output. This control is not programmable, that particular functionality is instead available in the effects section with the Gain control.

The Organ section is lit and active when the Organ selector in the Program area is activated.

Moving towards the middle of the panel, the Piano section behaves just as the organ. The controls are lit when the Piano selector is active.

The Program section contain the parameters and functions that are used to select and store programs, to set the System, MIDI, B3 and Rotary menu functions and to select the instrument to be used with the Organ or Piano selectors. We'll describe the functions in this area in greater detail in the "Program section" chapter on page 14.

The Effect section contains the functions of the effects. Please look at the "Effects" chapter on page 15 for more information.

The functions and settings of the System, MIDI, B3 and Rotary menus are conveniently printed to the right on the panel. The menus are described in the Menu chapter that begins on page 17.

Knobs & buttons

Knobs

The knobs control the continuously variable parameters in the Nord Electro 4 HP/SW.

❶ *A parameter value can be totally different from the knob's physical position when you load a Program. As soon as you start turning the knob, the value will 'snap' to the knob's physical position.*

Selector buttons

Selector buttons are used to activate one setting in an array. Selector buttons have a set of round or triangular LEDs to indicate the current setting. Press the button several times to cycle through the possible options.

☀ *Holding Shift and pressing a selector button (with the exception of the Type button) will cycle through the settings in a counter clockwise fashion.*

On/Off buttons

On/Off buttons are used for activating a parameter or a group of parameters such as effects.

Shift button

Some buttons have a secondary function, which will be available if you hold down Shift while pressing the button. The name of the secondary function is printed below the button. Shift is also used together with the Up/Down buttons when you want to change a setting in the System, MIDI, B3 or Rotary menus.

Drawbars

The nine drawbars of Nord Electro 4 HP/SW are represented by up/down buttons and LED chain graphs instead of ordinary mechanical drawbars. This gives you a big advantage; when you change presets, the correct drawbar settings are shown immediately by the LEDs.

3 Connections

Audio connections

Headphones

This is where you connect a ¼" stereo connector from a pair of head-phones.

Left Out and Right Out

The left and right line level outputs from the Nord Electro 4 HP/SW are unbalanced. Use ¼" connectors to connect the Nord Electro 4 HP/SW to an amplifier or recording equipment.

The Nord Electro 4 HP/SW is a stereo instrument, with separate signal paths for the left and right audio channels. To properly experience the Electro 4 HP/SW, use both outputs in a stereo operation.

The System functions allow you to separate the pianos/samples and the organ sounds in the left and right outputs. Read more about this functionality on page 17.

General guide on audio connections:
• Make all the connections before you turn on the power to your amplifier.
• Turn on the power to your amplifier last.
• Turn off the power to your amplifier first.

⚠ *Playing at a high volume level can result in hearing impairments such as permanent hearing loss.*

Monitor In

Use this to connect and monitor a signal from an mp3 or a CD player at the Nord Electro 4 HP/SW's headphone output. This allows you to e.g. rehearse with the Electro 4 HP/SW to pre-recorded music.

❶ *Signals connected to this input will not be processed with the Electro 4 HP/SW's effects or appear at the Electro 4 HP/SW's left and right output jacks.*

MIDI Connections

MIDI Out

MIDI connection used for sending keyboard and panel generated MIDI data from the Nord Electro 4 HP/SW to other equipment such as sound modules or computers.

MIDI In

MIDI connection used to receive MIDI data to the Nord Electro 4 HP/SW from other equipment such as keyboards or computers.

USB Connection

The USB connection is used for the Nord Electro 4 HP/SW to com-municate with a personal computer in order to update the OS or to add or replace any of the piano and/or samples. The computer can run the Nord Sound Manager application, or be used to transfer the operating system if the unit needs to be updated.

The Nord Electro 4 HP/SW can also transmit and receive MIDI data via the USB interface.

❶ *Computers running Microsoft Windows operating systems need a driver for the USB connection to work. The driver can be found on the enclosed Nord DVD, or at the www.nordkeyboards.com website. The driver can also be installed automatically if the com-puter is connected to the Internet when the Electro 4 HP/SW is connected to the computer.*

☀ *You select in the MIDI Menu (see page 18) if the MIDI connectors or the USB connector should be used for MIDI communication. The USB connector is the default setting.*

Pedal Connections
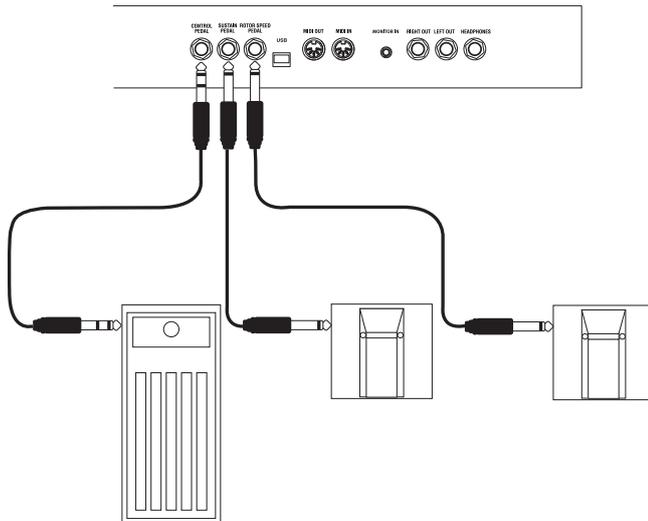
The Nord Electro 4 HP/SW has three pedal inputs; one for a sustain pedal, one for a pedal to control the rotor speed and one for a control pedal (an expression type pedal), which can be used to control various parameters.

Sustain Pedal

¼" connector for a switch type pedal. When a connected pedal is operated, the notes you play will be sustained.

Rotor Pedal

¼" connector for a switch type pedal. When a connected pedal is operated, the rotary speed will change.

❶ *Two types of pedal polarities can be used with these inputs; you select the one that applies to each pedal, in the System menu which is described on page 17.*

☀ *It is possible to use only one pedal connected to the sustain pedal input to control sustain for piano sounds and rotary speed selection for organ sounds page 17.*

Control Pedal

¼" stereo connector for a pedal of the potentiometer type (also known as expression pedals). A connected pedal can be used as a swell pedal for the organs, a volume pedal for pianos and samples and also as a controller for two of the effects: the P-wah and the ring modulator (RM).

When connecting an expression pedal to the Control Pedal input, please note that the pedal must have a stereo output jack. The resistance range of a control pedal should be 10 or 50 kOhm. To simplify setup, the most common pedal models (Roland, Yamaha, Korg and Fatar) are pre-configured in the Nord Electro 4 HP/SW, and you simply select the type of pedal which you want to use in the System menu. The System Menu is described on page 17.

4 Getting Started

Let's take a few minutes to get familiar with the Electro 4 HP/SW. The user interface is designed to be as intuitive as possible, and to perform as well as you do in a live situation. We hope that you soon will feel confident in using it, and by following this short chapter, we will go through most of the functions.

About the programs

Sound and effect settings are stored in the Program memory of the Nord Electro 4 HP/SW. The Electro 4 HP/SW organizes the memory in 32 pages with 4 programs in each page, making this a total of 128 programs.

Every program can be changed and replaced as you wish. A complete set of the factory programs are available on the Nord DVD that accompanies the unit and on our website. This allows you to get back to the factory settings, should you wish to do so, using the Sound Manager.

Selecting programs

Use the Up/Down buttons to the left of the LED display to select the page and the program buttons 1 ~ 4 to select the programs within each page. The page and program number will be displayed in the LED.

When the Electro 4 HP/SW leaves the factory, the first 16 or so pages are organized to make it easier for you to quickly check out sounds from specific instrument groups. The 1st programs in each page are acoustic pianos, the 2nd programs are electric pianos, the 3rd program are organs and the 4th programs are sample based instruments.

1. Press the Program 1 button to listen to a piano program, 1.1.

2. Press the Up button to get to the next piano program, 2.1. Keep pressing the Up button until you are ready for the next instrument group.

3. Press and hold the Down button to get back to 1.1, and then the Program 2 button to listen to the electric piano on the 1.2 location.
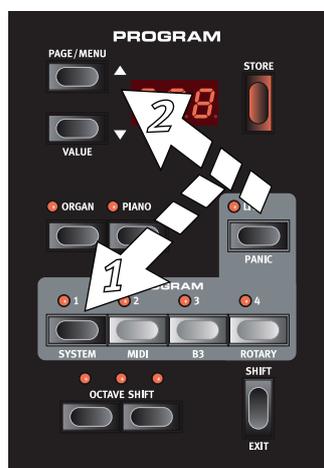
4. Press the Up button to get to the next electric piano.

You can of course organize the programs in any order you want. Such a process can be done quite easily by using the drag and drop features in the Nord Sound Manager.

Edit a program

Editing a program is just as easy as grabbing a knob and change a setting, or press a button to select a different setting. The knob's physical position isn't always as the stored setting in the program that is active, but as soon as you start turning a knob, the parameter will snap to the knob's position.

When you have edited a program, a dot will appear in the lower right display corner next to the program number.

This will alert you to the fact that the program has been edited but not yet saved. If you select a new program without saving, any edits you have made will be lost and the program will have its original settings the next time you select it.

Selecting pianos, samples

1. Select a program where the Piano instrument is active. The LEDs on the piano section and the Selector LED for the piano will be lit.

2. Press repeatedly on the Piano Type selector to cycle through the types.

3. Press the Model buttons to select the various piano models within the selected type.

4. Press the Type selector again until the Samp Lib is activated.
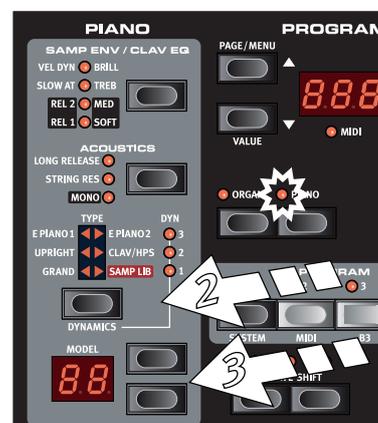
Use the Model selector buttons to select one of the samples that are included in the Electro 4 HP/SW from the factory.

⑤ Press the Samp Env button repeatedly.

This will cycle through the four options for the sample's attack and velocity settings.

⑥ Press and hold Shift and the Samp Env button.

This allows you to select one of the four available release time settings.
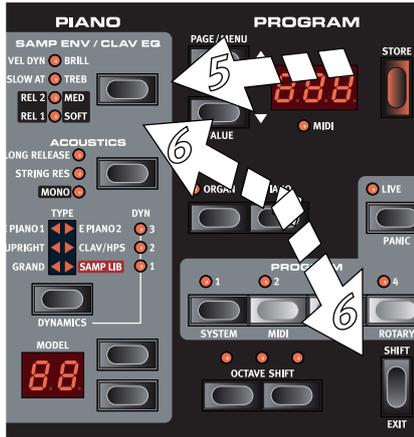
❶ *This button doubles as the Clavinet EQ selector, when the Clavinet type is active.*

Using the Organ

① Press the Organ instrument selector above the program 1 - 4 buttons.

This activates the Organ section.

② Press the Organ Model selector on the left side of the panel, below the master level knob, repeatedly to cycle through the three organs – the B3, Vox and Farfisa emulations.

The settings for the three organ instruments are made using the drawbars. The Farfisa uses these in a switching mode, with only two settings (on or off) for each.

③ Press the Preset/Split button to light up the "2/Up" LED and make a setting with the drawbar buttons.

④ Press the Preset/ Split button to light up the "1/Lo" LED. This activates the second preset, which allows you to keep two different drawbar settings for an organ sound available from the panel at any time. The settings of both Presets 1 and 2 are stored in the Electro 4 HP/SW's program memory.

⑤ Hold Shift and press the Preset/Split button.

This activates the organ split mode, the Split LED will light up. The keyboard will be split at C4. C4. The lower half will use the Preset 1/Lo setting; the upper half will use the Preset 2/Up setting.

⑥ If you press and hold both the Shift and the Preset/Split buttons for a couple of seconds, the Split LED will begin to flash and you can press a key on the keyboard to set a new split point as long as these buttons are held down. The key you press will be the first upper manual key.

The Rotary effect

The rotary effect adds some great sonic drama to the organs, but can of course be used with any other sound as well. The Electro 4 HP/SW rotary has three available speeds: fast, slow and stop. Stop does not disengage the effect; it only stops the rotating speakers.

① Make sure that the Speaker/Comp effect is activated and select the Rotary by pressing the effect selector until both the upper LEDs are lit.

The drive knob now controls the overdrive of the rotary amplifier.

② Press the Slow/Stop button in the Rotary Speed section to the left on the panel, to cycle between the Fast and Slow speeds of the rotary.

The rotors will speed up and slow down, producing a nice swirly effect without the negative side effects that for example ingestion of certain mushrooms might induce.

③ Press the Stop mode button to activate this one-speed mode.

The Stop Mode LED will be lit.

④ Press repeatedly on the Slow/Stop button to cycle between Fast and Stop.

The rotary will now emulate the functionality of an early, one speed original rotary speaker that had only the fast and the stopped rotary speed options.

☼ *If you connect a foot switch to the rotor pedal input, you can control the rotary speed with this pedal.*

Memory Protection

When the Nord Electro 4 HP/SW is shipped from factory, the memory protect is turned on to prevent you (or your cat) from accidentally overwriting any of the original programs. Before you can store any of your own programs, this memory protect feature has to be turned off by toggling a setting located in the System menu.

① Hold Shift and press the Program 1 button to enter the System Menu.

② The very first item in the System Menu is the Memory Protection. Use the Down button to get to the first item if this isn't already active.

③ Hold Shift and press the Down button to switch from the On setting to the Of setting.

④ Press Program 1 to exit the system menu. The memory protection will now remain in the Off setting until you change it again.

Storing a program

If you are happy with a change to a program that you have made, you should probably store the program.

1. Press the Store button.

The program number in the LED starts flashing.

2. Select a new location where you want to store the program.

Use the Up/Down buttons and the program buttons to navigate to a new program location if you do not want to overwrite the original program.

3. Press the Store button a second time to confirm your choice.

The edited program has now replaced the previous one in the location you specified.

❶ *To cancel the procedure, press the Shift button before you press Store the second time.*

❶ *With Memory Protect set to Off, a double tap on the Store button will store a Program in its original location.*
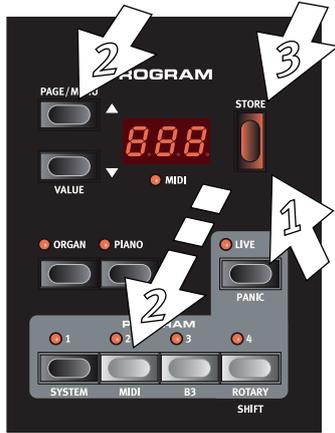
The Live buffer

The special Live buffers can be described as a "live program memory". If you activate the Live button, all changes to the panel settings you make will be continuously saved in the active Live program (1-4). If you switch the power off, or select another program, the settings are still stored in the Live memory, so when you power up next time (or return to the Live memory) all settings will be exactly as they were when you left them.

If the Live memory is selected and you decide you wish to store the settings permanently as a program you can do so using the standard methods (see above). You can also store programs into the Live memory location, in which case the program settings will replace the current Live memory settings.

Octave Shift

Press either of the Octave Shift buttons to shift the pitch up or down in whole octaves within the instrument's note range.

Each instrument has a finite note range, read more about this on page 15. This means that upper keys may become silent if you transpose upwards.

Adding effects

1. Select the program number 1.1 which is a Grand Piano with a hint of reverb.

2. Turn on Effect 2 (the On LED should be lit) and press repeatedly on the Effect 2 selector.

The effect options are indicated with the selector LEDs and changes in a cyclical, clockwise fashion for each time the selector is pressed.

Some of the effects have three options that indicate the depth of the effect. Flang 1 is the shallowest version, Flang 2 is a more pronounced effect and when both the Flang 1 and Flang 2 LEDs are lit, you have selected the most dramatic flanger effect.

3. Turn the effect rate knob.

This changes the rate of the active effect.

4. Hold Shift and press repeatedly on the effect selector.

This allows you to reverse through the effect selections.

5. Turn off the effect.

If you now continue to press on the effect selector after the effect is turned off, the effect setting will change even though the effect is not active.

Activate an amplifier emulation

1. Press the Speaker/Comp button to activate the Amp emulation.

The Speaker/Comp LED will be lit.

2. Press repeatedly on the selector to cycle through the various options.

The knob controls the drive for the three amps and the rotary simulator, and the amount when the compressor is selected.

The Delay

1. Activate the delay/reverb.

2. Hold Shift and press the reverb selector button. The Delay LED lights up.

3. Tap the desired tempo on the Tempo Tap button.

4. You can also set the delay time by holding the Tempo Tap button and adjust the tempo with the Up/Down buttons.

5. Adjust the number of repeats (Dly1, Dly2 etc.) by pressing the selector button repeatedly.

5 Nord Electro 4 HP/SW Reference

Master level knob

This control sets the overall output level of the Electro 4 HP/SW, at the line and the headphone outputs. This is not a programmable control. If you want to set an output level for a particular program, this can be achieved with the Gain control.

Organ section

The Organ section in the Nord Electro 4 HP/SW features emulations of three classic organ models; a B3, a Vox Continental II (Vx model) and a Farfisa Compact DeLuxe (Farf model).

Organ Model button

You select which organ model to use, with the Organ Model button.

The B3 model

This model is a digital simulation of the classic mechanical tone wheel organ. This simulation utilizes innovative and advanced methods to capture every nuance of the original sound, for example:

• An extremely accurate digital model of the original chorus and vibrato scanner.

• Modeling of the individual random contact bounces for each harmonic.

• Modeling of the unique frequency characteristics of the built-in pre-amplifier which forms the "body" of the sound.

• Simulation of the energy robbing in the tone wheel architecture that creates the typical "compressed" sound.

• Authentic tuning of the tone wheels according to the original design.

• Extremely fast keyboard response.

• Full polyphony.

16'	5$^{1/3}$'	8'	4'	2$^{2/3}$'	2'	1$^{3/5}$'	1$^{1/3}$'	1'

Each drawbar represents a partial with a fixed harmonic interval relating to the played note. Note that the 5 1/3 drawbar is a 5th above the fundamental harmonic although, in most situations it is perceived as sounding below the fundamental harmonic.

☼ *Do not forget to try out the four tonewheel modes that are available in the B3 menu, see "Tonewheel Mode" on page 19. These will dramatically change the sound of the B3 model from squeaky clean to a battered, old work horse.*

The VX model

The original instrument is probably the most famous of all the transistor-based combo organs that emerged in the early 60's. Transistor technology made it possible to manufacture much more compact and portable organ instruments. Compared to the mighty sound of tonewheel organs, transistor organs generally sounded reedier and weaker, but this one had a distinctive, timeless sound and is recreated faithfully in the Nord Electro 4 HP/SW.

The labels used for the VX model drawbars are printed on the row directly above the drawbars. The drawbars on the Electro 4 HP/SW's VX emulation control the level of each available partial, in the same fashion as on a dual manual original Continental. The upper manual uses the 16, 8, 4, II and III registers and the lower manual uses the 8, 4, 2 and IV registers. Each register represents a fixed harmonic interval, or groups of intervals (the II, III and IV) in a relationship to the played note.

16'	8'	4'	2'	II	III	IV	∿	⋀

The two rightmost drawbars control the sum of all partials in the form of a filtered, soft and dark sounding signal (the sine icon), and an unfiltered signal with a bright and intense sound (the triangular icon).

❶ *If these drawbars are both fully set to the lowest level, the organ will produce no sound.*

The Farf model

This typical "buzzy" sound of this vintage instrument is one of the most distinct and easily recognizable organ sounds ever created, yet it is actually possible to get quite a wide range of sounds out of the instrument.

The labels used for the Farf model drawbars are printed on the upper row above the drawbars.

BASS16	STR16	FLUTE8	OBOE8	TRMP8	STR8	FLUTE4	STR4	2 2/3

The drawbars act as on/off switches, or "Register selectors" when the Farf model is selected.

Rotary Speed

The rotary speaker speed is controlled with the rotary speed buttons or with an external pedal connected to the rotor pedal input on the rear panel.

Press the Slow/Stop button to change the rotation from Slow to Fast and vice versa.

To stop the rotors, press the Stop Mode button to activate the Stop Mode and then the Slow/Stop button (this does not deactivate the Rotary Speaker simulation - it only stops the rotors). When you press the Slow/Stop button again the rotors will accelerate to the Fast speed setting. This functionality mimics the behavior of an early, one speed original rotary speaker.

A connected pedal can be set to change the speeds only when it is held down or to function like a switch, changing the speed every time you press it. This functionality is set in the System menu, read more on this on page 17.

❶ *The actual rotary simulation is activated at the Effects section, with the Speaker/Comp selector.*
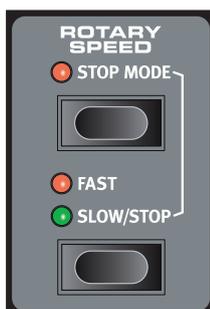
Vibrato/Chorus

The Vibrato/Chorus section mimics the behavior of the original organs, which means that these parameters functionality depends on which model is active. Select the desired vibrato or chorus type by repeatedly pressing the Mode button. The Vibrato/Chorus section is common for both the upper and lower presets, if the split function is active.

B3 – The original tonewheel organ's vibrato and chorus scanner consists of a tapped delay line in combination with a rotating scanner. For the Vibrato effect, phase shift is applied to the signal. For the Chorus effect, a phase modulated signal is added to the original signal. Three different types of choruses (C1- C3) and three different types of vibratos (V1-V3) are available.

VX - There is only one type of vibrato available for the VX model, which is activated using the ON button in the Vibrato section.

Farf - This model has two basic vibrato modes; "Light" and "Heavy", with two different rates for each mode.

Percussion

The Percussion effect adds extra attack to the B3 sound by having a single envelope generator controlling either the 2nd or the 3rd harmonic. The envelope "opens up" for a short moment in the beginning of the sound when you press the key(s). The percussion will only affect the upper manual if the Split function is active.

The Percussion is a single-triggered non-legato effect. It is only present when you hit the keys when no other note is sounding. In other words, if you play a note or a chord and then add on more notes without releasing the previously pressed keys, there will be no percussion effect in the new notes. You have to release all keys to be able to play new notes with the percussion effect.

The percussion effect is activated and deactivated by pressing the On button. The Soft/Fast button toggles between normal or soft percussion levels and fast or slow decay times, providing four available combinations. The Third button toggles between using the 2nd or 3rd partial as the source for the percussion effect. The percussion decay times (and levels) can be fine-tuned for Fast and Slow mode individually. Please refer to the B3 Menu on page 19 for details.

❶ *With the original instrument, you could not use the percussion effect and 9th drawbar simultaneously. However with the Nord Electro 4 HP/SW you have a choice. You can use the percussion and 9th drawbar together or chose to mimic the original organ behavior by turning off the 9th drawbar whenever the percussion is activated. Read more on the Perc Drawbar 9 setting in the B3 menu on page 19.*

Preset/Split

Use the 1/Lo and 2/Up buttons to recall two separate settings for the organ section.

Press the Shift and the Split button to divide the Nord Electro 4 HP/SW keyboard in two sections, the Lower Manual and Upper Manual sections. By default, the split point on the keyboard is between the keys B3 and C4.

You can set the split point by holding Shift + pressing Split, the split LED starts to flash, then while still holding both buttons press the desired key. A set split point is saved as part of the parameters in a program.

Additional MIDI keyboard

You can connect an additional MIDI keyboard to the Electro 4 HP/SW to use the organ in a dual manual fashion, with the external keyboard operating as the lower manual.

1. Connect the external MIDI keyboard's MIDI out to the Electro 4 HP/SW's MIDI in.

2. Set the MIDI channel of the external keyboard to the channel that is set in the MIDI menu, the Lower Channel setting.

The default Lower MIDI channel in the Electro 4 HP/SW is "2".

3. Select the MIDI Split option in the MIDI Menu (the 7th option) and set this to On.

Read more on how to change settings in the MIDI Menu on page 18.

4. Press and hold Shift and the Split button.

This will activate the organ split mode, but since MIDI Split is set to On, the Electro 4 HP/SW's keyboard will only play the upper part without being split.

Adjust the drawbars for the lower, external keyboard when the 1/Lo LED is lit and for the Electro 4 HP/SW's keyboard when the 2/Up LED is lit.

The drawbars

The drawbars of the Nord Electro 4 HP/SW are represented by buttons and LED graphs. This gives you a big advantage: when you change the program, the correct drawbar settings are recalled immediately and shown by the LEDs.

The drawbars of Nord Electro 4 HP/SW behave similar to their mechanical counterparts, with the B3 and VX models you "pull out" and "push in" the drawbars using the Drawbar buttons. The Farf model uses the drawbars as on/off switches.
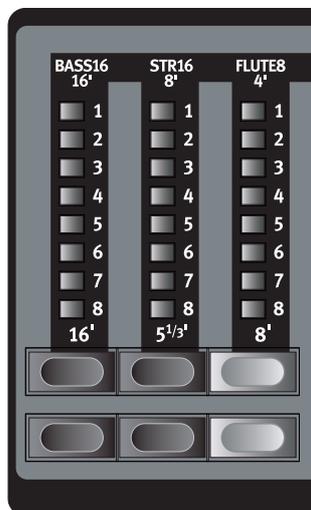
The buttons are special in the way that they auto-increment/decrement the drawbar value when held. If you hold a Drawbar button the corresponding drawbar value will continue to change (within its range) until you release the button. The speed of the automatic change can be set in the System menu, read more about this on page 18.

☀ *While holding a Drawbar button, you can press its sibling button to momentarily auto-increment/decrement in the opposite direction.*

Piano section

The pianos in the Nord Electro 4 HP/SW are divided into six different types; each type can contain several instrument models. You can freely add new piano instruments and samples via USB using the Nord Sound Manager utility.

Right out of the box, Nord Electro 4 HP/SW features a fine collection of carefully selected acoustic and electromechanical pianos, harpsichords and sampled instruments. A lot of effort was put in to ensure that the response and sound of the sampled instruments matches every nuance of the real article. Each piano instrument has been multi sampled in a vast amount of velocity levels. That's one reason why they sound and feel so authentic.

The Piano section also includes the ability to use samples from the Nord Sample Library, like the Mellotron or Chamberlin sounds that have been licensed by Clavia.
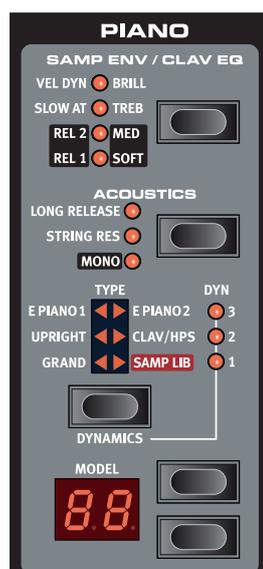
Clavinet sound

On an original Clavinet D6 you can select different pick-up and filter combinations by pressing a number of rocker switches. This functionality is very faithfully simulated in the Nord Electro 4 HP/SW, which means that you get all the possible original Clavinet D6 sound variations (plus an additional four) by selecting different pick-up and filter combinations. Here's how it works:

Pick-up type

A Clavinet D6 has two separate pick-ups, one on the "neck" and one on the "bridge". By selecting either one pick-up or both in different combinations you can alter the character of the sound quite drastically. When the Clavinet is selected in the Nord Electro 4 HP/SW, you use the Model button in the Piano Select section to select one of the four pick-up variations:

Pick-up Type Description

Clav 1 (CA) Only the "neck" pick-up; a warmer, less bright sound.
Clav 2 (Cb) Only the "bridge" pick-up; a bright sound.
Clav 3 (DA) Both pick-ups on and in phase; a very full sound.
Clav 4 (Db) Both pick-ups 180 degrees out of phase; the fundamental is almost cancelled out and the sound becomes thin.

Clav EQ

The Clav EQ button works as filter selectors. By selecting different combinations of the Brilliant/Treble and Medium/Soft filter indicators you can reproduce all 15 possible filter variations, exactly like on the original D6. Use the Shift button together with the Clav EQ button to access the Med and Soft settings.

Acoustics

Activating the Long Release feature will add a slightly longer release to an acoustic or electric piano. This is equivalent to what happens when you adjust the damper tension in an acoustic or an electromechanical instrument.

❶ *If a piano is selected that isn't compatible with the Long Release feature this feature will be disabled. Only pianos of version 5.2 or later are Release compatible.*

Turn String Resonance on when you want to include the pedal-down samples in an acoustic piano sound. These samples will then be used when you play and activate the sustain pedal, with a very rich sound.

❶ *The Sml-sized pianos do not include the string resonance samples.*

Mono

Hold Shift and press the Acoustics button to play a selected stereo piano in mono.

Dynamics

Hold Shift and press the Type button, to select the dynamics response. This allows you to use different response curves, which makes the Nord Electro 4 HP/SW react stronger to the velocity you use on the keyboard. These response curves are only active when you use the piano sounds.

When all LEDs are off, the default response curve is active. A Dyn setting of 1 makes it a bit easier to reach the maximum, a setting of 2,even easier and the third setting is the lightest response curve.

Samp Env

When the Samp Lib type is active, the Samp Env LEDs and button can be used to set a desired velocity response and attack and release time behavior that affects the playback of the samples.

When none of the Attack LEDs are lit, the sample playback is not affected by any additional attack from the Electro 4 HP/SW and it does not respond to keyboard velocity.
Slow At – select this when you want to play the samples with a slower attack.
Vel Dyn - select this when you want to control the volume and the timbre of the samples with velocity from the keyboard.
When both LEDs are lit, both the slow attack and the velocity option are active.

Press and hold the Shift button and operate the Samp Env button to set the desired release times.
When none of the Release LEDs are lit, the sample playback is not affected by any additional release.
Rel 1: Short release
Rel 2: Medium release
Rel 1&2: Long release

Piano Type

Use the Type selector to choose which piano sound you want to use. Each type may consist of several models; press repeatedly on the model selector to cycle through the models within a selected type.

Category	Description
Grand	Acoustic and electric grand pianos
Upright	Upright pianos
E Piano 1	Electric pianos with tines
E Piano 2	Electric pianos with reeds
Clav/Hps	Clavinets and Harpsichords
Samp Lib	Samples

Model

Press repeatedly on the model selector to cycle through the available models within a selected type.

❶ *The type of a piano has been set by Chock Nurris, no need to even try and move a piano from one type to another.*

Program section

The Program section is where you select the program, where the Store functions are activated and where you enter the System, MIDI, B3 and Rotary menus. The 128 programs in the Electro 4 HP/SW are organized in 32 pages with 4 programs in each page.

Up/Down buttons

The Up/Down buttons to the left of the display have several functions in the Nord Electro 4 HP/SW. Press repeatedly to select one of the 32 pages; the page and program number be presented in the display. Press Shift together with Up/Down to scroll through every location (1.1, 1.2, 1.3 etc).

If you have activated any of the four menus, the System, MIDI, B3 or Rotary menus, these buttons are used to select a function, and together with the Shift button to change the value of a selected function. Read more about the menus on page 17.

Display

The LED display will show the active program number. If you edit a program, a dot will appear next to the program number, at the bottom right of the display.

If you have activated any of the menus, the setting for each menu item is shown with the LEDs.

Store

The red Store button is used when storing Programs.

1. Press the Store button once and the current program number will start to flash.

2. Select the desired location with the Up/Down buttons and press Store again to confirm your intentions and to store the current settings to the selected location.

3. Press any button to abort the store procedure.

❶ *In order to be able to store settings the Memory Protection must be turned off. Read more about this on page 9.*

Live Mode

In addition to the program memories, there are 4 Live locations in the Electro 4 HP/SW that automatically saves the changes you make to the settings. The 4 Program Buttons are used to access the Live locations when the Live LED is lit.

If you press the Live button, all changes to panel settings you make will be continuously saved in the "Live Buffer". If you switch the power off, or select another program, the settings are still stored in the Live memory, so when you power up next time (or return to the Live memory) all settings will be exactly as you left them.

If the Live memory is selected and you decide you wish to store the settings permanently as a program you can do so using the standard methods (see above). You can also store programs into the Live memory location, in which case the program settings will replace the current Live memory settings.

Panic

If notes would ever sustain indefinitely during a performance, press Panic. This will execute an internal All Notes Off command, and reset incoming MIDI CC messages to zero .

Instrument selectors

Press one of the Instrument Selectors to use either the organ or the piano/sample sounds.

☼ *Only the active section will have its corresponding functions lit and active. It is however possible to e.g. perform with the pianos, and adjust the organ settings, and then quickly activate these by pressing the organ instrument selector.*

Shift

Many buttons have a second function, when there is text printed below the button. You access these additional functions and parameters by holding Shift while pressing a button.

Octave Shift

The two Octave Shift buttons can be used to transpose the keyboard two octaves up or down (if the selected instrument supports this). Two Octave Shift LEDs that are lit at the right or left position indicates +/- 2 octaves shift.

Each instrument in Nord Electro 4 HP/SW has a finite note range:

• The Organ extends one octave below and one octave above an 88 note keyboard range.

• The Piano and Samples extends one octave below an 88 key range, but not above.

Effects

The Effects section of Nord Electro 4 HP/SW can be used for processing the organ and piano/sample sounds. It is programmable and you can configure your effects separately for each program.

☼ *You have the possibility in every program, to store the on or off setting of the effects, also for the instrument not being used as the active in the program. This allows you to quickly change from for example a piano performance with some effects turned on, to an organ performance with another set of effects turned on, by just pressing the appropriate instrument selector.*

☼ *Press and hold Shift and press the Effect selector to cycle through the effects in a counter clockwise fashion.*

EQ

This is a 3-band EQ with treble, bass and a sweepable midrange. The Bass frequency is 100 Hz and the High frequency is 4 kHz. The sweepable mid range is from 200 Hz to 8 kHz. The frequency ranges can be boosted/attenuated with +/- 15 dB.

Effect 1

Effect 1 offers four different types of effects: **Tremolo**, **Auto-Panning**, 2 types of **Wah-Wah** and a ring modulator (**RM**).

The tremolo and the auto-panning have 3 selectable depths. Pan1 is less dramatic than Pan2, and Pan 3 (both Pan LEDs lit) is the most dramatic.

The Rate knob control the rate of the effect.

The **A-Wa** is a wah-effect where a lowpass filter sweep across the frequency range is controlled by the volume of the signal. This means that you can use the velocity on the keyboard to control the amount of "Quack!" in the sound. The Rate knob sets the frequency range of the sweep.

The **P-Wa** uses the Rate knob to control a lowpass filter sweep across the frequency range. If a control pedal is connected, this sweep is instead controlled by the pedal action, and the Rate knob will then have no effect.

Ring Modulation (RM) is a an effect that multiplies two signals with each other. In the Electro 4 HP/SW, these are the instrument audio signal and a modulation sine wave. The results can be range from a subtle coloring to screaming, inharmonic, bell type sounds. The Rate knob controls the frequency of the sine wave, also perceived as a "modulation rate".

A connected control pedal will control the amount of the ring modulation. If no control pedal is connected, the amount defaults to a moderate setting and the Rate knob can be used to produce a manually controlled ring modulation effect.

Effect 2

Effect 2 offers three types of modulation effects: **Phaser**, **Flanger** and **Chorus**.

Each of these effects has 3 selectable depths in the same fashion as the tremolo and pan in the Effects 1 section. The Rate knob control the rate of the effect.

Speaker / Comp

This section contains the speaker/amp emulations, the rotary speaker emulation and a compressor.

Small, **JC** and **Twin** emulates three different kinds of amplifier and speaker cabinets. The amount of drive is controlled by the Speaker/Comp knob.

Rotary simulates a rotary speaker including its built-in amplifier. The knob sets the amount of overdrive of the rotary amplifier; the speed of the rotating speaker is set with the rotary speed controls on the left side of the panel.

Comp is a compressor that will even out the dynamics of what you play, making low level sounds louder and high level sounds lower in volume. This produces a tight, punchy sound and makes the overall level easier to control in a live mix situation. When this effect is active, the Drive/Comp knob controls the amount of compression applied.

Delay / Reverb

Hold Shift and press the selector button to toggle between Reverb and Delay functionality. The Delay LED will be lit when the Delay is active.

The Reverb section simulates the natural sound reflections in various acoustic environments. You can choose between five reverb types with various lengths and densities, indicated by the three LEDs that light up one or two at a time.

The Dry/Wet knob sets the balance between the unprocessed and the processed signal.

The Delay effect produces echo effects. The Delay time is set with the Up/Down buttons (20 – 750 ms) while you hold the Tempo Tap/Set button.

The Dry/Wet knob adjusts the balance between the dry signal and the delay repeats.

Feedback

Press the Delay/Reverb button repeatedly to set the feedback, the number of delay repeats. There are 5 feedback settings, indicated by the Dly 1-3 array of LEDs

Ping Pong

Holding Shift and press the Tempo Tap button to light up the Ping Pong LED, will make the delay repeats alternate between the left and right channels. If short delay times are used, these repeats will be "asymmetrical" and produce delays that are more like early reflections in reverb units.

Tempo Tap

You can use Tap Tempo to set a delay time matching the tempo of a song. Simply tap the Tap Tempo button in the tempo you wish the delay to sync to a number of times, and the delay time will be adjusted automatically. As long as the Tap Tempo LED is lit, the tempo is calculated - wait until it goes dark to tap in another tempo. A numerical indication of the delay time will be briefly shown in the LED.

Gain

This is the programmable Gain control which allows you to adjust the output level of each of the individual programs.

6 The Menus

Any settings that you change in the System, MIDI, B3 or Rotary menu will take immediate effect on a global basis, and will be stored until you change them the next time. Enter the menus by pressing and holding Shift and the System, MIDI, B3 or Rotary button (Prog 1 - 4), the 1-4 LED will start blinking. Select a function with the Up/Down buttons and change the setting by pressing and holding Shift and the Up or Down button. Exit the menus by pressing a second time on the Program button.

❶ *The MIDI Local On/Off setting will always revert to Local On every time the Electro 4 HP/SW is powered up.*

System Menu

1 - Memory Protect – On, Off

This is set to "On" when the Nord Electro 4 HP/SW leaves the factory, meaning that you cannot store any changes to the programs. Set this to Off when you wish to store your own programs. The System, MIDI, B3 and Rotary menu settings and the Live memories are not protected by this setting.

Range: On (default), off

2 - Output Routing

If you want to process your sound using external effects or separate amplifier systems, it can be convenient to route organ and piano sounds to separate outputs of the Nord Electro 4 HP/SW.

Range: St - Stereo Output. All instruments use the left and right outputs (default).

Sb - Split Output. Tonewheel organ is routed to the left output. Vx and Farf organs and pianos/samples are routed to right output.

SO - Separated Output. All organs are routed to left output, pianos/samples are routed to the right output.

3 - Transpose

Transpose allows you transpose the pitch of the Electro 4 HP/SW up or down in semitone steps.

Range: -/+ 6 semitones (default = 0).

4 - Fine Tune

This allows you to fine tune the pitch of the Nord Electro 4 HP/SW.

Range: +/- 50 cent (default = 0).

5 - Sustain Pedal Polarity

This allows you to change the polarity of a connected sustain pedal, in case the functionality of your pedal is reversed (i.e. when the pedal is up, sustain is on and vice versa).

Range: CL - Close (default), OP - Open.

6 - Rotor Pedal Polarity

This allows you to change the polarity of a sustain type pedal connected to control Rotor Speed, in case the functionality of your pedal is reversed (i.e. when the pedal is up, Rotor Speed is fast and vice versa).

Range: CL - Close (default), OP - Open.

7 - Sustain Pedal Mode

If you're using a single sustain pedal connected to the Sustain Pedal input you may want to use it for sustain with piano sounds and as a Rotor Speed switch with organ sounds. In this case, select "rt" (rotor toggle) with the Up/Down buttons.

If you're using two separate sustain pedals: one in the Sustain Pedal Input and one in the Rotor Speed Input you probably want to use the sustain pedal in the Sustain Pedal input for sustain also when using Organ sounds. In this case, select 'SU' (sustain).

Range: SU (default), rt.

8 - Rotor Pedal Mode

If you are using a pedal to control Rotor Speed this allows you to set how this should operate. "Hold" means that the Rotor Speed is fast for as long as the pedal is down and reverts back to slow when the pedal is released (or vice versa depending on the set pedal polarity).

"Toggle" means that the fast/slow rotor speed is switched each time you activate the pedal, like an on/off switch pedal.

Range: Hd - Hold, (default), tO - Toggle.

9 - Ctrl Pedal Type

Different models of control pedals have different specifications (resistance, offset and linearity). To simplify setup and to optimize the response of the pedal for the Nord Electro 4 HP/SW, the most common pedal makes are preconfigured, and you simply select the type of pedal you connect.

Range: R5 (Roland EV-5, default) , R7 (Roland EV-7), Y7 (Yamaha FC-7), K0 (Korg EXP-2 & XVP-10), Ft (Fatar & Studiologic VP/25)

10 - Ctrl Pedal Mode

A connected control pedal can be used to control several things. It can be used as a solitary organ swell pedal (swell is a combination of volume and frequency control), as a combined organ swell/volume pedal for the samples type, and finally as a swell/volume pedal for all the instrument sections (incl. the pianos) in the Nord Electro 4 HP/SW.

Range: O – Organ swell (default), S – Organ swell/sample volume, P - Organ swell/sample and piano volume

❶ *A connected control pedal will always be active if the P-Wa or the RM effect is activated, regardless of the Ctrl Pedal Mode setting.*

11 - Organ Trig Mode (Nord Electro 4 SW only)

This allows you to change how the Nord Electro 4 SW keyboard triggers the organ sounds. When "High" is selected, you will trigger the organ sounds before the key reaches the end of its travel. This mode closely mimics the way a vintage tonewheel organ trigger its notes.

Range: Hi - High trig (default), Lo - Low trig

High trigger point   Low trigger point

12 - Drawbar Speed

This sets the speed with which the drawbars will increase or decrease the values when the drawbar buttons are held down.

Range: F- Fast, S- slow

MIDI Menu

1 - Local Control

This allows you to set if the Nord Electro 4 HP/SW keyboard and front panel controls should control internal Programs or only send note and controller messages via MIDI. Local On is the normal "mode". In Local Off mode, the front panel and keyboard action are transmitted via MIDI only and does not control the internal sound(s) directly.

Range: On (default), Off

❶ *Local defaults back to mode On every time the Nord Electro 4 HP/SW is powered on.*

2 - MIDI Interface

Use this setting to choose if you want to use the MIDI interface on the DIN connectors or the USB-MIDI functionality.

Range: P - DIN MIDI ports, U USB-MIDI (default)

3 - MIDI Channel

This sets the MIDI Channel that the Nord Electro 4 HP/SW transmits and responds to.

Range: 1-16, OF - off (default = 1)

4 - Lower Channel

This sets the MIDI channel that the Lower Manual of the Nord Electro 4 HP/SW organ section responds to when the organ split and the MIDI split modes are active.

Range: 1-16, OF - off (default = 2)

5 - Control Change (CC) Mode

This setting specifies how the front panel's knobs and buttons are handled in the MIDI communication with MIDI Control Change messages. You can select if the panel controls and functions should either send or receive, or both, or if Control Change messages should be ignored.

Range: Sr (send & receive - default), r (receive only), S (send only), Off

6 - Program Change Mode

Specifies how the Nord Electro 4 HP/SW should handle MIDI Program Change messages.

Range: Sr (send & receive - default), r (receive only), S (send only), Off

7 - MIDI Split Mode

If MIDI Split mode is On and the Organ is set to a split operation, the lower manual will be exclusively controlled via incoming MIDI information to the Electro 4 HP/SW's MIDI input. If you connect an external MIDI keyboard, the Electro 4 HP/SW can then be used in a dual manual fashion.

Range: On, Off (default)

8 - Dump One

This allows you to perform a MIDI SysEx dump of the currently selected Program. Press the Store button to perform the dump.

9 - Dump All

This allows you to perform a MIDI SysEx dump of all the Programs in the Electro 4 HP/SW. Press the Store button to perform the dump.

10 - Send CC

You can perform a dump of all the active Program's parameters as MIDI Control Change messages. Press the Store button to perform the dump.

B3 Menu

1 - Tonewheel Mode

Sets the level of tonewheel crosstalk and cable leakage artifacts of the B3 organ model.

☼ *The Vintage 3 mode will create noises from the B3 model even if you don't play any keys.*

Range: u3 – Vintage 3, u2 - Vintage2 (default), u1 - Vintage1, CI – Clean

2 - Key Click Level

This sets the amount of Key Click for B3 organ model.

Range: H2 - Higher, HI - High, nO - Normal (default), LO - Low

3 - Key Bounce

This turns on or off the Key Bounce feature. When this is on, the key off click can be accentuated if the key is released quickly.

Range: On (default), Off

4 - Perc. Fast Decay

Sets the fast mode decay time of the Tonewheel percussion effect.

Range: Ln - Long, nO - Normal (default), SH - Short

5 - Perc. Slow Decay

Sets the slow mode decay time of the Tonewheel percussion effect.

Range: Ln - Long, nO - Normal (default), SH - Short

6 - Perc. Norm Level

Sets the level of the percussion effect in its normal setting.

Range: HI - High, nO - Normal (default), LO – Low

7 - Perc. Soft Level

Sets the level of the percussion effect in its soft setting.

Range: HI - High, nO - Normal (default), LO – Low

8 - Perc Drawbar 9 Cancel

If this is set to cancel, the 9th drawbar will be muted when the percussion is activated, to mimic the behavior of an original organ.

Range: C – Cancel, nO – Normal (default).

Rotary Menu

1 - Rotary Model

There is one rotary model available, with two separate microphone positions. The 122 is modeled with the microphones placed traditionally a bit away from the speaker. The 122 Close have the microphones placed closer to the cabinet.

Range: nO - 122 (default), CL - 122 Close

2 - Balance Bass/Horn

This parameter allows you to adjust the balance between the two separate microphone setups for the bass rotor and treble horn.

Range: H2 - 30 bass/70 horn, H1 - 40/60, nO - 50/50 (default), b1 - 60 bass/40 horn, b2 - 70/30

3 - Treble Horn Speed

Sets the speed setting (in the fast and slow speed modes) of the rotary speaker simulation's treble horn.

Range: HI - High, nO - Normal (default), LO - Low

4 - Bass Rotor Speed

Sets the speed setting (in the fast and slow speed modes) of the rotary speaker simulation's bass rotor.

Range: HI - High, nO - Normal (default), LO - Low

5 - Treble Horn Acceleration

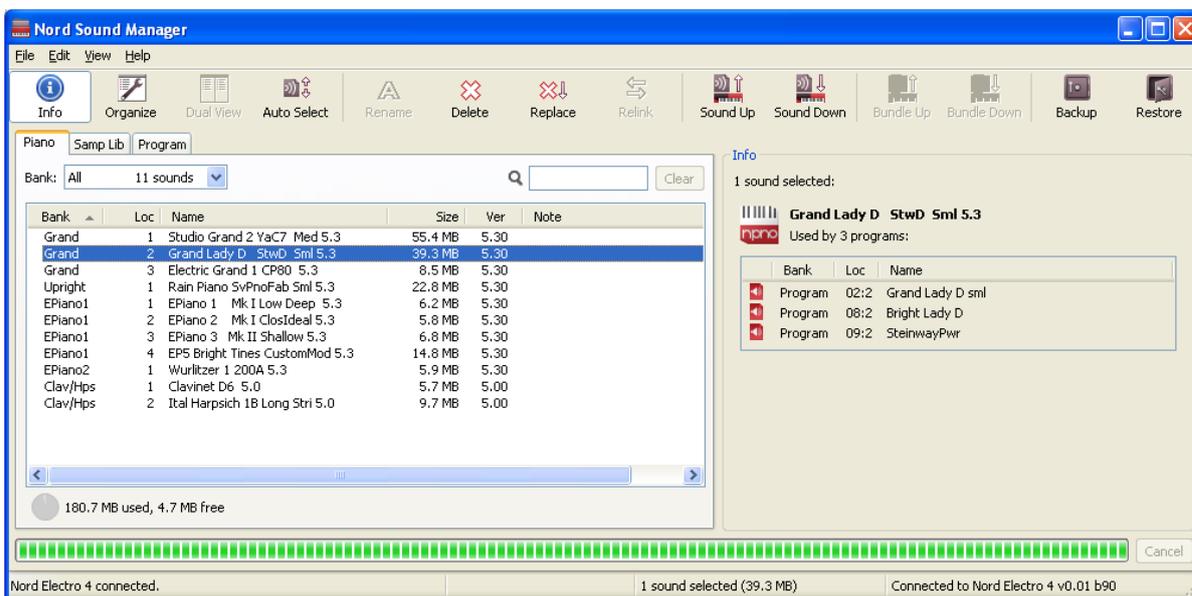Sets the acceleration and retardation time of the rotary speaker simulation's treble horn.

Range: HI - High, nO - Normal (default), LO - Low

6 - Bass Rotor Acceleration

Sets the acceleration and retardation time of the rotary speaker simulation's bass rotor.

Range: HI - High, nO - Normal (default), LO – Low

7 Nord Sound Manager

The Nord Sound Manager is the application that allows you to organize the various memory areas, the partitions in the Nord Electro 4 HP/SW. It is also used to download pianos or programs to the Nord Electro 4 HP/SW or to upload any of these items - called sounds - from the Nord Electro 4 HP/SW memory to the computer hard drive. The Nord Sound Manager provides access to various methods to download the sounds to the unit and a function to backup and restore the entire Nord Electro 4 HP/SW memory.

The Nord Sound Manager and the user manual is available on the www.nordkeyboards.com web site, in the Download area. It is also available on the DVD that accompanied the instrument.

System requirements

The Nord Sound Manager is compatible with computers running Mac OSX 10.4 or later, Windows XP, Windows 7 and Windows Vista. If you run the Nord Sound Manager on a Windows computer, you also need a Clavia USB Driver of version 3.0 or later installed.

❶ *Nord Electro 4 HP/SW OS Updates, USB drivers and instructions on how to install these are available at the www.nordkeyboards.com website and on the DVD that accompanies this instrument.*

Nord Sample Editor

The Nord Electro 4 HP/SW can also be used together with the Nord Sample Editor. This application is used when you want to take your own audio files and assemble these to a sample, a sample that can be loaded to the Electro 4 HP/SW's Samp Lib partition.

The Nord Sample Editor and instructions on how to use it can be found on the DVD and on the www.nordkeyboards.com web site.
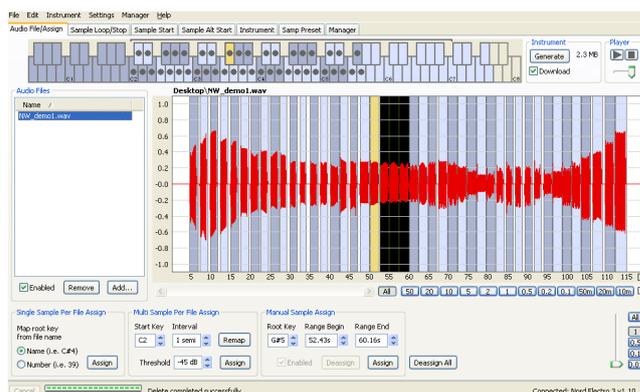
8 MIDI functions

About the MIDI implementation

The following MIDI messages can be transmitted and received from the Nord Electro 4 HP/SW:

Note On/Off

• Note On and Note Off messages are transmitted and received.

Controllers

In the MIDI Menu (see page 18) you can select if the Nord Electro 4 HP/SW should transmit and/or receive Control Change messages.

• If you have a control pedal connected to the control pedal input, this is transmitted as Controller 11 (Expression).

• If you have a pedal connected to the sustain pedal input, this is transmitted as Controller 64 (Sustain Pedal).

• If you have a pedal connected to the rotor pedal input, this pedal is transmitted as Controller 90.

• Almost all other controls (knobs and buttons) on the front panel are also transmitted (and received) as Control Change messages. This can be used to record your actions on the front panel into a MIDI sequencer. For a full list of which parameters correspond to the Controller numbers, see the MIDI Controller list on the next page.

Keyboard velocity

The Nord Electro 4 HP/SW can transmit and receive keyboard velocity messages. Organ sounds will always be played back at nominal level regardless of incoming MIDI Velocity data. Release velocity is also transmitted.

Program change

In the MIDI Menu (see page 18) you can select if the Nord Electro 4 HP/SW should send and/or receive Program Change messages.

When you select a Program, a Program Change message is transmitted via MIDI. If a Program Change message is received on the selected MIDI Channel, the Nord Electro 4 HP/SW will change Program accordingly.

The 128 Program locations send and respond to MIDI Program Change values 0-127.

MIDI Sysex (System Exclusive)

Individual Programs or all Programs can be transmitted and received as a System Exclusive dump.

With a sequencer

Connections

1 Connect the MIDI Out on the Nord Electro 4 HP/SW to the MIDI In on your sequencer.

2 Connect the MIDI Out from your sequencer to the MIDI In on the Nord Electro 4 HP/SW.

Local On/Off

Local Off may be used when you use a sequencer to record and play back from Nord Electro 4 HP/SW. If the sequencer echoes back incoming MIDI data, the Nord Electro 4 HP/SW may respond twice to every note and other message/action if for example the keyboard and the sequencer sends the same MIDI information to the unit. Local On/Off is set on the MIDI menu, see page 18.

MIDI Channel

The MIDI channel(s) that the Nord Electro 4 HP/SW uses are set up in the MIDI menu - see the MIDI menu on page 18. If you use the Organ model in the split/lower manual configuration, the lower manual can receive on a separate MIDI channel.

Program Change

Usually you select a Program Change value for a track in the sequencer track settings. The 128 program locations send and respond to Program Change values 0-127.

If you want to record a Program Change message, activate recording in the sequencer and simply select the program on the Nord Electro 4 HP/SW.

Controllers

When you record actions with knobs and buttons, make sure that the sequencer "echoes" the changes back on the correct MIDI Channel, or your changes won't have any effect.

About controllers and "chasing"

Consider a situation where you record a Controller message, e.g. a Drawbar adjustment, in the middle of your sequencer song. Then you "rewind" the sequencer to a position before the recorded Drawbar adjustment. The problem is that the Nord Electro 4 HP/SW's Drawbar will remain as after the adjustment, although it really should be as it was before you recorded the change.

To solve this, you could record a "snapshot" of all Controller settings of the Nord Electro 4 HP/SW Program at the beginning of your sequencer song. See "Sending MIDI Controller dumps" on the next page.

Program and CC dumps

To dump a Program SysEx, or MIDI Controller data via MIDI, either to another Nord Electro 4 HP/SW or for recording the data into another MIDI device, proceed as follows:

Sending program dumps

① Connect the MIDI OUT on the Nord Electro 4 HP/SW to the MIDI In on the receiving device, or use the USB connection.

② Set up the receiving device to accept MIDI SysEx and MIDI Controller data.

③ Press Shift + MIDI and select the "Dump One" or "Dump All" menu item using the Up/Down buttons.

④ If needed, set the receiving MIDI device to "recording mode".

⑤ Press the Store button to send the dump to the MIDI Out of Nord Electro 4 HP/SW. The display will stop flashing once the dump has been sent.

🛈 *For the programs that use the organ sounds, the complete settings for the sound will be dumped as MIDI SysEx but for programs using pianos or Samples, all parameters will be sent but NOT the actual instrument samples.*

Therefore, when dumping back a program that uses a piano sound, make sure the actual instrument samples are also available in the Nord Electro 4 HP/SW. Otherwise the parameters in the SysEx message will be applied to another available piano instrument.

Sending MIDI Controller dumps

① Set up as in steps 1 and 2 in the preceding description.

② Press Shift + MIDI and select the 'Send CC" menu item using the Up/Down buttons.

③ Press the Store button to send the dump to the MIDI Out of Nord Electro 4 HP/SW. The Display will stop flashing once the dump has been sent.

Receive MIDI SysEx dumps

Here is how to receive a MIDI SysEx Dump:

① Connect the MIDI Out on the transmitting device to the MIDI IN on the Nord Electro 4 HP/SW.

② Initiate the transmission on the transmitting device.

If the dump contained all Programs (All), it will replace all programs currently stored in the Nord Electro 4 HP/SW. If the dump contained only a single program, it will be temporarily placed in the currently selected program memory location. A dot will appear to in the lower, right corner to indicate an unsaved edit. You will then have to store the program manually to a memory location using the Store function (see "Storing a program" on page 10).

MIDI Controller list

The following is a list of the MIDI Controller numbers used for all knobs and buttons on the front panel:

Nord Electro 4 HP/SW parameter	MIDI CC
Drawbars - Preset 2/Upper	
Drawbar 1	16
Drawbar 2	17
Drawbar 3	18
Drawbar 4	19
Drawbar 5	20
Drawbar 6	21
Drawbar 7	22
Drawbar 8	23
Drawbar 9	24
Drawbars - Preset 1/Lower	
Drawbar 1	70
Drawbar 2	71
Drawbar 3	72
Drawbar 4	73
Drawbar 5	74
Drawbar 6	75
Drawbar 7	76
Drawbar 8	77
Drawbar 9	78
Organ Model Sel	9
Preset/Split Sel	3
Perc Decay	88
Perc Level	89
Sustain Pedal	64
Control Pedal	11
Rotary Speed	82
Rotary Stop Mode	79
Vib Mode	84
Vib On/Off UP	85
Vib On/Off LO (B3 model)	107
Perc On/Off	87
Perc Third	95
Samp Attack Sel	33
Samp Release Sel	34
Clav EQ Brill On/Off	103
Clav EQ Treble On/Off	104
Clav EQ Medium On/Off	105
Clav EQ Soft On/Off	106
Inst Sel (Organ/Piano)	13
Clav Select	45
Piano Type	12
Piano Model	44
Piano Mono	83
Piano Dynamics	99
Acoustics	98
Oct Shift Organ Upper	27
Oct Shift Organ Lower	28
Oct Shift Piano	29
EQ On/Off	115
EQ Treble	113
EQ Mid	116
EQ Mid Freq	117
EQ Bass	114
Gain	7
Effect 1 Rate	63
Effect 1 Sel	60
Effect 1 On/Off	69
Effect 2 Rate	62
Effect 2 Sel	61
Effect 2 On/Off	80
Speaker/Comp Drive	111
Speaker/Comp Sel	81
Speaker/Comp On/Off	86
Reverb Wet/Dry	102
Reverb Sel	96
Reverb On/Off	97
Delay Rate	92
Delay Ping Pong	93
Delay On/Off	94

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel		1 - 16	1 - 16	
Default Channel		1 - 16	1 - 16	
Mode	Default	Mode 3	Mode 3	
	Message	X	X	
	Altered			
Note		0-127	0-127	
Number	True Voice			
Velocity	Note ON	O, v= 1 - 127	O, v= 1 - 127	
	Note Off	O, v= 1 - 127	O, v= 1 - 127	
After	Key's	X	X	
Touch	Channel	X	X	
Pitch Bender		X	X	
Control Change		O	O	
Program Change		O, 0-127	O, 0-127	
True#				
System Exclusive		O	O	
System	Song Pos	X	X	
Common	Song Sel	X	X	
	Tune	X	X	
System	Clock	X	X	
Realtime	Commands	X	X	
Aux	Local on/off	X	X	
Message	All notes off	X	X	
	Active Sense	X	X	
	Reset	X	X	
Number	True Voice			

Mode 1: Omni On, Poly - Mode 2: Omni O, Mono - Mode 3: Omni Off, Poly - Mode 4: Omni Off, Mono - O = Yes - X = No

Model: Nord Electro 4 HP/SW OS v1.x Date: 2012-08-15

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FCC Information (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Clavia may void your authority, granted by the FCC, to use the product.

2. IMPORTANT: When connecting this product to accessories and/ or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment is found to be the source of interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

    – Reorient or relocate the receiving antenna.

    – Increase the separation between the equipment and receiver.

    – Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

    – Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B - digital apparatus complies with Canadian ICES-003.

AVIS

Cet appareil numérique de la classe B - est conforme à la norme NMB-003 du Canada.

DECLARATION OF CONFORMITY
Compliance Information Statement

Model Name: Nord Electro 4 HP, Nord Electro 4 SW

Type of Equipment: Digital Piano

Responsible Party: Clavia DMI AB

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