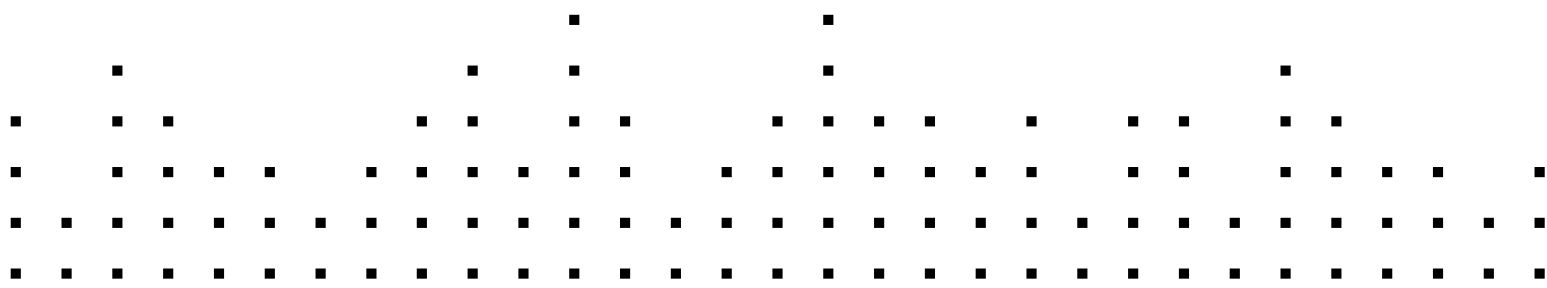


SCARBEE A-200

USER MANUAL



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Document Version: 1.0 (02/2010)

Product Version: 1.0 (02/2010)

Special thanks to the Beta Test Team, who were invaluable not just in tracking down bugs, but in making this a better product.

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1 Introduction



The Scarbee A-200 is a faithful reproduction of a legendary electric piano, recreating not only its signature sound but also the unique dynamic response of the original instrument, hereby continuing the new Vintage Keyboard product line commenced with the release of the Scarbee MARK I.

Although the original instrument is a small piano, the project undertaken to reproduce it in software has been huge. Prior to the commencement of two months of recording, a painstaking process of restoration lasting six months was undertaken. This involved a range of measures aimed at creating a “super” electric piano which has perhaps the highest signal to noise ratio of any yet produced. Sources of noise and distortion, such as the power transformer, were externalized and audio-critical components were updated with higher quality versions wherever possible.

The A-200 has a dynamic and versatile sound and tends more towards a more edgy sound. Certainly, it can deliver a soft and sweet tone, but its light action allows players to easily deliver a performance with more bite.

During test recordings, we determined that the dynamic response of the A-200 was quite different to that of the MARK I, as it exhibits a high degree of characterful, timbral variation in the forte area of its dynamics. Unlike the MARK I, the A-200's piano's action is very light, making it easy for a keyboardist to play continuously in this range of the piano's timbre. In order to capture such a defining element of the piano's personality, we decided to increase the size of the the sampling project by 30%, with additional focus on the forte range of the instrument. Once this was accomplished, a proprietary system was employed to ensure that the sampler's response to velocity variation was identical to the original piano's keyboard action. In order to accurately reproduce the dynamics of the original keyboard, both the sustained and the released sounds of each of the 64 keys result in a total pool of over two thousand 24 bit .wav files. All samples are full length (no loops) and we recorded release samples for each of the 16 velocities at the exact same level as the corresponding 16 sustain samples (except those for the top five keys, which have no damper, causing the keys to ring out to their end).

Why did we go through this much trouble?

Technology is moving at an increasing pace, with music companies releasing new (almost disposable) instruments every day, but still many of us find ourselves looking to the past for sounds which truly inspired us. Organic tones with inconsistencies and chameleon-like character flaws, which are very difficult to program into predictable digital instruments. However, the original electric piano from which the A-200 was sampled is electro-mechanical and infamously difficult to maintain. The light action often results in the piano being played quite hard, which leads to cracked reeds, electrical short circuits and tuning problems. Finding a source of these reeds itself is a monumental task in some countries, and using a soldering iron to tune your piano isn't anyone's idea of a fun break before the gig. Due to being so impractical, it won't be long before such fragile instruments will disappear completely. To date, several products have included limited attempts to describe this electric piano in software, but only recently has the very technology supplied the tools required to capture the soul of the beast. With the Scarbee A-200, musicians will have access to the inspirational sounds of this great electric piano for generations to come—vintage sonic lightning preserved in a cutting-edge software bottle.

2 Restoration

In order to guarantee that the sampled instrument was as close to, or better than, the original (a 1972 model), an exhaustive process of refurbishment was undertaken prior to the recording process. During the whole programming phase we used a proprietary system of sampling in order to ensure that the sound, action and feel of the original instrument was mirrored and maintained. We went through this kind of trouble because a key element in recreating the experience of playing the real instrument is accurately capturing the response dynamics. As a result of this effort, the action and feel of the Scarbee A-200 exactly duplicates that of a well “hot rodded” instrument.

Vintage repair wizard Preben Lyngmark from Musikpartner did a fantastic job removing noise from the piano and doing the initial restoration. Preben was extremely helpful when I called for emergency help! Truly a great guy and friend. First thing Preben did was repairing one of the broken knobs. Then we took the power transformer out of the instrument to get rid of the magnetic hum. We added extra metal screening folio (in Europe we don't use grounding on keyboards that often). I also had to move the piano far away from any studio power cables when recording, otherwise you could hear the hum even with the transformer taken out. Preamp transistors were replaced by modern low noise type, which really helped with the noise problems. Dampers were adjusted—note that the top five keys have no dampers! We replicated this on the A-200.

The tuning took weeks of work. We ordered many, many reeds from different places to get to the right sound. The reeds had to be original and from the original metal from the 60s or 70s, otherwise it simply wouldn't sound right. Adding lead to lower the pitch, I had to redo a couple of the reeds (in fact we ended up replacing almost every reed of the instrument with original reeds... gotta make it perfect, you know!). To increase the pitch, lead was removed from the reed tip with a file. It was important to shape a kind of pyramid shape to get the right sound. Not an easy task! Finally the reeds were installed. The screws had to be tight, otherwise the sustain would be short and the reed sound dull. It was painstaking. The reed had to be placed exactly in middle of the fork to get distortion right when hitting hard (a magnifier glass was needed for that).

3 The A-200 “Feel”

Why is the feel so important? If you are a composer or piano player, you will be able to answer this question for yourself. The A-200 is one of a handful of classic instruments that can honestly claim to be a writer’s primary compositional workhorse. Not just a tool for committing already firm ideas to a recording medium, but an inspirational tool—an instrument which works in a synergistic way with the composer to generate fresh new musical ideas. We believe that this inspirational element is largely the result of a combination of the basic timbral range of the original electric piano and its very organic dynamic response.

After extensive testing we came to the decision that, in order to ensure that the sound, action and feel of the original piano was authentically duplicated, a proprietary system of sampling was needed to be applied throughout the entire recording phase of the Scarbee A-200’s development. Without this system, it would simply not have been possible to recreate the experience of playing the real electric piano. As a result of this effort and attention to detail, the action and feel of the Scarbee A-200 exactly duplicates that of an exceptionally well maintained, and “hot rodded” instrument.

As with the Scarbee MARK I, we feel proud to be able to say that the Scarbee A-200 has, for the first time, captured that same tone and feel, the true soul of the original in 24 bit digital form. The truly wonderful benefit of this technology is that we are now able to preserve this great EP’s character far beyond the natural lifetime of such an electro mechanical instrument and well into the future for generations of musicians to come.

Unlike a modeled instrument, the Scarbee A-200 is not a software engineer’s approximation of the elements which combine to create this electric piano sound.

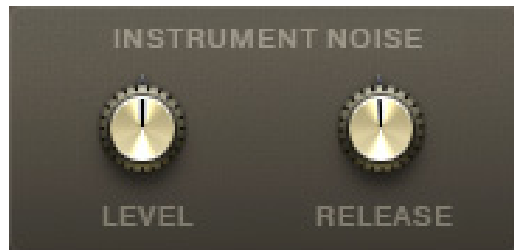
In the end, the A-200 is all about playing. Sit back, load up and enjoy.

4 Controls

4.1 Original Noise Adjustment

For the A-200 we recorded the original noise before we removed the noise from the samples using sophisticated noise-reduction techniques. We made certain that samples were not degraded in quality after removing the noise, not even the highest frequencies.

The default setting is the exact original level of noise. Noise will play along with other samples when you hit a key, and since the noise sample is mapped to 1-note polyphony, you always get the same amount of noise whether you play one or thirty keys. Feel the magic when turning down the noise to zero!



- **Instrument Noise Level:** Move the knob to set the level of the hum and hiss noise. Original recording level of the noise is middle position.
- **Instrument Noise Release:** Move the knob to set the release time of the noise. The default setting is in middle position. If you want noise to be present the whole time in a song or live, you may turn the knob beyond the middle position.

4.2 Effects

In this new edition released by Native Instruments, we have included some cool effects to make the sound even greater!

- **FX Type:** switches between Send and Insert effect pages



- **Effect Preset:** selects between 10 FX presets. It is possible to save five user presets.



4.3 Tremolo



Amount: We recreated the Vibrato amount and speed of the original instruments for total authenticity. Move the knob to set the modulation intensity. You can also use modulation wheel CC#1 to control this.

4.4 Reverb



- **Size:** determines the room size by setting the length of the reverb. Higher values simulate larger rooms, lower values smaller rooms.
- **Level:** sets the level of the reverb

4.5 Delay



- **Time:** determines the interval in milliseconds between hearing the straight signal and the first delay of the delayed signal. This Parameter can be synchronized to an external MIDI clock. Click on arrow to select time value from the menu.
- **Feedback:** sends a portion of the output back into the input of the delay line, which creates repeating echoes. A value of zero produces only one echo, higher values give multiple echoes.
- **Level:** sets the level of the delay signal

4.6 Pan



- **Level:** Move the knob to set the modulation intensity. Higher values will pan further to the sides.
- **Speed:** determines the speed of the panning. This parameter can be synchronized to an external MIDI clock. Click on arrow to select the time value from the menu.

4.7 Auto-Wah



- **Speed:** determines the speed of the modulation of the effect. This parameter can be synchronized to an external MIDI clock. Click on arrow to select the time value from the menu.
- **Tone:** controls the initial frequency of the effect and decides the timbre of the sound

4.8 Compressor



- **Threshold:** sets a level above which the compressor starts reducing peaks. Only signals above the threshold are affected by the compression ratio, signals below are unaffected.
- **Output:** sets the output level of the module

4.9 Chorus



- **Depth:** sets the amount of LFO modulation applied to a signal. Higher amounts result in a stronger chorusing effect.
- **Level:** sets the dry/wet balance of the chorus

4.10 Distortion



- **Drive:** determines the amount of distortion applied to the sound. Higher values increase the distortion effect.
- **Output:** sets the output of the module

4.11 Phaser



- **Depth:** sets the amount of LFO modulation applied to a signal. Higher amounts result in a stronger phaser effect.
- **Level:** sets the dry/wet balance of the phaser

4.12 Amp



- **Bass:** boosts or cuts the level of the lower frequencies
- **Treble:** boosts or cuts the level of the higher frequencies

5 Credits

Production Credits

Recording, Editing, Programming and FX Presets by Scarbee

Kontakt Script Developer: Nils Liberg

Instrument Graphics: Stefan Kengen

Beta-testers

Christian Vinten, Lars Daniel Terkelsen.

THANKS TO

Nils Liberg for the fantastic scripting (wow we did crazy stuff this time!). Stefan Kengen, great work! The whole Native Instruments crew: Sascha Kubiak, Tobias Menguser, Gerald Zollner, Alexander Stamm, Marcus Rossknecht and Dinos Vallianatos. Rick Chadwick for helping me with all kinds of stuff, Christian Vinten and Sevan Gökoglu for their great playing! Preben Lyngmark for all his help and guidance.

My dear wife Anne—for all your work, support and love. And finally a very special thanks to my wonderful children: Nikolaj, Oscar & Victor.